

Nursing approaches and their effect on the health of elderly with COVID-19

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Abstract

This review aims to discuss the protection and appropriate nursing methods for managing COVID-19 in elderly. This is a narrative review study. The increase in the elderly population worldwide and the higher prevalence of comorbid diseases in this group, the elderly are particularly at a high risk during this pandemic. Nurses are involved in follow-ups and care as well as in primary, secondary and tertiary health services for the elderly. The disease has adverse effects on the physical health of elderly individuals who have a weak immune system, limited activity, and difficulty in taking adequate nutrition. Conditions such as an inability to cope with stress, weakness, and hopelessness adversely affect psychological health. Furthermore, conditions such as loneliness, being away from loved ones, stigmatization, and abuse adversely affect social health as well. Nursing theorists such as Nightingale, Orem, Rogers who have significantly contributed to this discipline, have explained the relationship between the elderly and the environment, self-care, energy field, stress-coping methods, adaptation process, and spiritual care during a pandemic. Nurses have a significant role and responsibility in preventing the transmission of the virus, treating and caring for the infected elderly, and providing post-discharge rehabilitation.

Keywords: COVID-19, elderly, nursing, protection, theory

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1.Introduction

Coronavirus is a single-stranded enveloped RNA virus with a positive polarity. It is called coronavirus because of its rod-like extensions on its surface, which are called “corona”— meaning “crown” in Latin. Coronavirus is also called the “crowned virus” (COVID-19 Rehberi, 2020; WHO, 2020a).

On 31 December 2019, the World Health Organization (WHO) China Country Office was informed of cases of pneumonia of an unknown etiology (unknown cause) detected in Wuhan city, Hubei Province of China, and a new type of coronavirus virus strain—novel coronavirus (2019-nCoV), which has not been reported in humans previously, was identified. On 13 January 2020, the Ministry of Public Health, Thailand, reported the first imported case of lab-confirmed 2019-nCoV from Wuhan, Hubei Province, China (COVID-19 Rehberi, 2020). It was determined that the increase in the number of cases was related to the animal market in Wuhan city. Thereafter, all the patients were isolated and closely monitored and these markets were closed and disinfected. Measures were taken against this infectious disease, and this disease was stated to have no available treatment (ECDC, 2020). Deng et al. examined the characteristics of closed coronavirus disease (COVID-19) cases in Wuhan and found that the deaths were mostly reported in elderly individuals (Deng et al., 2020). On January 30, 2020, the outbreak of COVID-19 was declared a Public Health Emergency of International Concern. On March 11, 2020, WHO declared this COVID-19 as a pandemic (WHO, 2020a).

Compared with younger individuals, elderly individuals have more vulnerable physiological, psychological, social and emotional states. Globally, life expectancy was estimated at 72.3 years in 2019. As of 2019, there are 703 million elderly aged >65 years worldwide, and this number is expected to exceed 1.5 billion by 2050 (World Population Ageing, 2019).

Due to aging populations, COVID-19 is mostly expected to affect the elderly. As of this review was being written, there were 63.911.555 confirmed cases, 38.680.647 recoveries, and 1.420.462 deaths worldwide (T.C.C. Dijital Dönüşüm Ofisi, 2020). The fact that the elderly population is the primary group that needs to be protected from the disease emphasizes the significance of this pandemic in this age group. The elderly should particularly be informed, supported, and protected during this pandemic. Nurses are essential members of the healthcare system and function as educators, counselors, advocates, and caregivers in managing patients with COVID-19.

Nurses, who are involved in primary health care services for protective and preventive purposes, in secondary health care services for early diagnosis and treatment, and tertiary health care services for rehabilitation and re-adaptation, provide follow-up and care for the elderly who are part of the high-risk group (State of The World's Nursing, 2020). Many healthcare professionals, particularly nurses, play a significant role in reducing the peak point of COVID-19 and preventing its spread (Prem et al., 2020). Although studies regarding the present outbreak have aimed to identify the virus, find a treatment, and determine the affected groups, to the best of our knowledge, no studies to date have focusing on nursing in COVID-19. The present review aims to discuss the protection and appropriate nursing methods for managing COVID-19 in the elderly.

2. Effect of COVID-19 on the health of the elderly

2.1. Effect on physical health

One of the main reasons for the need to protect the elderly from COVID-19 in the high-risk group is their weak immune systems. Immunity theory argues that senescence is caused by the body's self-protection inability against injuries, diseases, mutations, or external organisms because of a dysfunctional immune system. With aging, there is a decline in the immune system's ability to recognize and destroy cells when necessary and to distinguish between the body's own tissue and foreign tissues (Nies & McEwen, 2019). The functions of antigen-providing cells and cytokine secretions of lymphocytes decrease, whereas the amount of pro-inflammatory cytokines and oxidative stress increases with age. As the organism loses self-recognition ability, autoimmune reactions develop and destroy cells and systems. Shrinkage and atrophy in the thymus over time, cellular differentiation, and regression of other thymic functions also play a role in the weakening the immune system. As explained by the immunity theory, the risk of developing COVID-19 increases in the elderly as their immune system does not work as effectively as young individuals (Boluktas, 2019; Nies & McEwen, 2019).

Malnutrition in the elderly can be prevented by ensuring adequate amounts of immune system boosting nutrients, such as vitamins A, E, C, and B6; carotenoids; and zinc, are included in the diet. It is also ben reported that increased fat in the diet decreases immune functions. Therefore, increasing the intake of vegetable oil, which is rich in polyunsaturated fatty acids, in the diet is recommended. Preventing immune deficiency in the elderly also reduces the risk of cancer, cardiovascular diseases, and infectious diseases (Boluktas, 2019).

2.2. Effect on psychological health

COVID-19 adversely affects the health of the elderly. According to Maslow's Hierarchy of Needs, it is accepted that elderly individuals fulfill the physiological needs, ensuring safety, love, and acceptance; respecting and being respect; and self-actualization. Given that elderly individuals, who fulfill all the criteria of Maslow, believe they are close to the end of their life and thus have a fear of death. Therefore, they are exposed to high-stress levels because they assume that their lives will be shortened if they develop COVID-19. This pandemic causes the elderly to live a fearful and unhappy life filled. Because of losing their peers, the elderly feel that death is close, and this feeling leads to an increase in their stress levels (Wallace, 2007; Hahad et al., 2020).

Lack of having loved ones nearby, practicing social distancing with their relatives, and taking protective measures such as paying attention to their hygiene also increase anxiety levels in the elderly. Quarantine and curfew practices to protect health in individuals aged >65 years lead to stigmatization and increase the tendency for depression. Elderly individuals feel weak because they are unable to meet their own needs and are dependent on others. They feel hopeless because of the prevalence of the pandemic and the lack of a definitive treatment and vaccine. Elderly patients with chronic diseases are afraid of getting infected with the virus (Wallace, 2007; Hahad et al., 2020).

A sense of loneliness develops in elderly individuals because they must stay away from their loved ones, relatives, friends, and grandchildren to prevent the spread. Elderly individuals who live alone have difficulties in shopping due to COVID-19. As a result, emotional problems such as depression,

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anxiety, and anger develop because of having difficulties in solving their problems or achieving a comfortable life (Wallace, 2007; Hahad et al., 2020).

2.3. Effect on social health

According to Atchley's continuity theory, the effects of sociocultural accumulation continue in old age. This continuity theory states that the individual maintains the skills, some habits, relationships, and preferences, which were acquired during adulthood and have become a part of their personality over time, in old age. Therefore, elderly individuals continue their life in line with these habits in the pandemic. Working elderly individuals want to continue working and meeting family and friends, whereas elderly individuals with chronic diseases want to continue receiving health care. They experience a social challenge to adapt to the new lifestyle imposed by the pandemic. The social, economic, and medical burden on the elderly increases during this period. The elderly are deceived, defrauded, and abused by individuals who take advantage of this situation (Boluktas, 2019; United Nations, 2020).

3. Significance of COVID-19 for nursing

WHO has designated 2020 as "The Year of the Nurse and Midwife," whereas the International Council of Nurses (ICN) has declared "Nurses: A Voice to Lead – Nursing the World to Health" as the theme for 2020. WHO and ICN have emphasized the significance of nurses worldwide with these themes, demonstrating how nurses are central to addressing a wide range of health challenges. Nurses on the front lines are among the heroes in the pandemic. They are actively involved in the treatment and care of individuals with COVID-19 and in taking protective measures to prevent contamination to healthy individuals and themselves, particularly the elderly in the high-risk group. Elderly patients with COVID-19 are placed in proper isolation and treated and cared by nurses, who also communicate with their families and provide holistic professional care to the elderly. Managing an epidemic requires teamwork, and most of this responsibility is on nurses who provide first-hand care to the elderly (WHO, 2020b; ICN, 2020).

According to Nightingale's environmental theory, poor environmental conditions have an adverse effect on health, whereas good environmental conditions have positive effects (McKenna & Slevin, 2008; Karadag et al., 2017). According to Nightingale, the following five factors are important for health: clean air, clean water, effective drainage, light, and cleanliness. Today, these five factors are of great importance in the protection against pandemics (Rice, 2006). Nightingale argues that nursing practices should be based on observations. Therefore, the focus of nursing is not on the disease but on the patient. In addition to prioritizing the patient, pure air, pure water, efficient drainage, cleanliness, light, noise, nutrition and food, variety, personal cleanliness, and bed and bedding were major concepts in the Nightingale environmental nursing theory. During the pandemic, the environment of the elderly is rearranged in a way to protect the individual from contamination (Karadag et al., 2017).

Orem's self-care deficit theory focuses on the concept of self-care and seeks for actions aimed at protecting the health and supporting life. Self-care is defined as processes initiated and maintained by the individual to maintain health and well-being. Orem's theory involves the assessment if the physical, chemical, biological, socioeconomic, and environmental factors that affect the individual's self-care activities. According to Orem, nursing is helping the individual until they can perform living activities by themselves and supporting the individual to take care of themselves as soon as possible.

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In this pandemic, elderly individuals must perform self-care, while protecting themselves against contamination, to support independent living functions (Karadag et al., 2017).

Rogers' theory of Science of Unitary Human Beings argues that humans and the environment are one as an inseparable whole. The theory views nursing as both a science and an art as it provides a way to view the unitary human being, who is integral with the environment. Rogers describes the unitary individual as personal, unique, and whole. According to Rogers, the constantly changing energy field around individuals has mutual relations with other energy fields. There is a constant flow of energy between humans and the environment. Due to the negative energy of the pandemic on individual and environmental health, nurses evaluate the unitary individual with its environment and contribute to the care of the individual. During this pandemic, the elderly are evaluated together with their environment, which is a negative energy field (Allender et al., 2014; Karadag et al., 2017).

The Neuman systems model is a nursing theory based on the individual's relationship to stress, the reaction to it, and reconstitution factors that are dynamic in nature. This theory states that a human is an open system that constantly interacts with their environment. This model is a practical guideline, wherein people are evaluated in a multidimensional manner and methods for remaining calm and balanced against stressors are provided. To identify and implement effective interventions, nurses observe how the patient perceives and reacts to stressors. Because there are many negative stressors during a pandemic, nurses fulfill important roles and responsibilities in understanding the individual and helping them to cope with stress (Alligood, 2014).

In Roy's adaptation model of nursing, the individual is defined as an open and adaptable system that encounters stimuli, develops coping mechanisms, and produces responses. According to Roy, coping mechanisms should be evaluated, given that the adaptation level of the individual changes constantly. To adapt to challenging processes, the individual's adaptation abilities are revealed and the strengths of the individual are emphasized. During a pandemic, nurses evaluate and support the elderly's strategies of coping with stress and their response to stressors (Alligood, 2014; Karadag et al., 2017).

Jean Watson's Theory of Human Caring defines the individual as a whole, consisting of mind, body, and soul. It defines health as the unity, harmony, and integrity of mind, body, and soul. Harmony comprises self-awareness, self-esteem, and self-care processes. According to this model, nurses have respect for the spirituality of the elderly during a pandemic, evaluate the perception of death, and provide safe communication and peculiar care to the individual (Alligood, 2014; Karadag et al., 2017).

4. Protection of the elderly from COVID-19

WHO and the Ministry of Health have provided recommendations for managing the COVID-19 pandemic. Most of these recommendations are performed by nurses and require follow-ups in elderly individuals.

4.1. Recommendations for primary protection

Slowing the spread of COVID-19 or stopping the disease requires the full participation of society. The primary strategies for preventing the spread of the disease are preventing interpersonal contacts and avoiding exposure to this virus. On April 2, 2020, WHO announced the slogan "Stay home" (WHO, 2020c).

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Hands should be washed with soap and water for at least for 20 seconds. Hands should be washed regularly rather than using gloves. Wearing gloves generally create a misperception of hygiene in individuals, thereby increasing risky behaviors (Garnier-Crussard et al., 2020). Frequently touched surfaces (such as door handles, taps, and telephones) should be cleaned daily. Diluted bleach can be used for cleaning, or solutions containing at least 70% alcohol should be preferred. Attention should be paid to environmental cleaning, vehicles should be frequently ventilated, and common surfaces should be disinfected (CDC, 2020a; CDC, 2020b).

A balanced diet is important for the elderly to strengthen their immune system. In such conditions, generally highly processed fat, sugar, and salt-containing foods are consumed, given that access to fresh foods is limited. WHO recommends that sugar should constitute less than 5% of the total energy intake for adults and that less than 5 g of salt should be consumed per day. Moreover, WHO emphasizes the importance of consuming at least 400 g of fruit and vegetables per day. Altered eating behavior of the elderly may adversely affect the immune system, general physical, and mental health. Eating raw or undercooked animal products should be avoided. The kitchen and utensils should be kept clean. Foods should be well-cooked and kept at safe temperatures below 5°C or above 60°C (SB, 2020; WHO, 2020d; WHO, 2020e; United States Environmental Protection Agency, 2020).

WHO recommends 150 minutes of moderate or 75 minutes of vigorous-intensity physical activity throughout a week. Furthermore, at least two physical activities that develop core muscles and at least three physical activities that help improving balance and preventing falls should be performed in a week. These activities should be performed as much as possible during this pandemic (WHO, 2020f). It was stated in a study that physical activity increases adaptation of the elderly to chronic disease, decreases falls by improving balance, and reduces stress (Musich et al., 2018).

The elderly should come up with sources to cope with and manage stress. Methods such as relaxation techniques, progressive muscle relaxation, breathing exercises, meditation, distraction, reading books, listening to music, time management, and worshipping in line with their beliefs should be encouraged in elderly individuals (Ayaz Alkaya, 2017). The pandemic causes stress, anxiety, and depression, particularly in low- and middle-income countries, wherein stress management and mental health improvement is neglected during the pandemic and psychological health protection becomes inadequate (Yao, Chen & Xu, 2020). To reduce anxiety and panic, demoralizing or dispiriting media sources should be limitedly followed (WHO, 2020g; United Nations, 2020).

Smoking makes individuals more vulnerable and disrupts the structure of the lungs. COVID-19 targets the lungs, thus causing lung diseases. Furthermore, there is an increased risk of developing COVID-19, given that the smoker constantly touches the lips with their fingers. Because of reduced lung capacity, smokers have a prolonged recovery process in COVID-19. Therefore, smoking must be quit in a pandemic (WHO, 2020h; UCSF, 2020).

Cyber frauds try to trick the elderly into clicking malicious links or opening attachments in pandemics. Such actions reveal important credentials that can be used to steal money or private information. Criminals use phishing methods to install malware or steal sensitive information. To prevent this, care should be taken when providing personal information to third parties and individuals must carefully evaluate why personal information is requested and whether it is necessary (WHO, 2020i).

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Healthily aged individuals are at reduced risk. Maintaining a healthy lifestyle with good nutrition and physical activity is important for reducing the contamination for people who are self-quarantining or working from home. Countries set their policies and priorities in this pandemic. Despite the increasing workload, nurses provide care services to strengthen the elderly and protect their health in this pandemic (WHO, 2020j).

4.2. Recommendations for secondary protection

The elderly population, prioritized by science, is among the risk groups. Primary care such as Family Health Centers providing outpatient care; secondary care such as hospitals providing inpatient treatment; and tertiary care such as private branch hospitals have a responsibility in managing COVID-19. Therefore, early diagnosis and treatment are also important along with the protection from contamination. An integrated and observable surveillance system needs to be available for the elderly population to access the different stages of services. Nurses ensure the continuity of elderly care and improve life quality with effective time and resource management, and communication, by fulfilling the case manager role during COVID-19 (State of The World's Nursing, 2020; Prem et al., 2020).

Certain factors must be dealt with carefully in the care of the elderly with COVID-19. The elderly should be isolated from others and kept in a separate room. Moreover, if there any individual with suspected COVID-19 at home, they should wear a medical mask and follow personal hygiene instructions. Clothes of the infected individuals should be washed in a separate machine at 60°C–90°C. The patient's mobility within the home should limited as possible. The patient should use a separate toilet and bathroom, if possible. Otherwise, these areas should be well ventilated. Bathrooms and toilets should be cleaned with diluted bleach (1:100 normal dilution; sodium hypochlorite) at least once a day. All residents should monitor their health status and seek medical attention in case of developing a symptom. As the elderly have a weak perception of the symptoms, protection should be provided via explanatory health education without inducing fear (COVID-19 Rehberi, 2020).

Facilities that provide care to elderly patients (nursing home, care center, etc.) are considered a high-risk area for the spread of the virus. Patient care becomes more difficult in elderly patients with comorbid diseases and using multiple medications. For example, the majority of deaths in seasonal flu are due to comorbidities and complications that develop after infection. In particular, the incidence of venous thromboembolism, catheter-related bloodstream infection, pressure ulcers, falls, and delirium is recommended to be decreased (Garnier-Crussard, Forestier and Krolak-Salmon, 2020). Major comorbid diseases affecting the elderly during the pandemic include diabetes, asthma, pneumonia, cancer, heart disease, and chronic lung diseases (COVID-19 Rehberi, 2020).

Deng et al. examined the characteristics of the recovery and death rates of COVID-19 in Wuhan city. They found that elderly individuals and individuals with comorbid diseases constitute the majority of the death cases, whereas dyspnea and sputum were the most prevalent complaints for which people applied to the hospital (Deng et al., 2020). Another study investigated the risk factors for COVID-19 in 487 patients from Zhejiang Province and identified the high-risk individuals. These factors included older age, male sex, and hypertension (Shi et al., 2020). A retrospective study has revealed that the common characteristics of COVID-19-related deaths were older age, male sex, cardiovascular comorbidity, and cerebrovascular diseases. While the most common finding in both the deceased and recovered patients was fever and cough, the more common findings in deceased patients were dyspnea, chest tightness, and impaired consciousness (Chen et al., 2020).

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4.3. Recommendations for tertiary protection

Elderly patients recovering from COVID-19 are supported for re-adaptation and rehabilitation. The elderly need a nurse to keep a healthy and independent life. The nurse helps them with her knowledge and skills. The mortality rate was reported to be higher in elderly patients with COVID-19 than in young and middle-aged individuals. It was also found that the course of the disease was more severe in elderly individuals, causing a sequelae (Liu et al., 2020). Another study has shared the results of providing palliative care to patients with COVID-19. The strategy in this study focuses on key content areas such as setting and addressing care goals, addressing moderate and severe symptoms, and supporting family members. The outcomes of the study emphasized the necessity of immediate organization for providing care to patients, ensuring the satisfaction of family members and reducing sequelae with early intervention (Fausto et al., 2020). In a review study, the importance of rapid evaluation of the elderly in the high-risk group at a geriatric hospital in France using age-specific control guides for COVID-19 was emphasized (Vanhems, 2020).

5. Conclusion and Recommendations

COVID-19 affects elder individuals in the vulnerable group more severely. During this pandemic, the primary protection measure is to stay at home and prevent transmission to stop the spread of the virus and to protect the elderly. It is known that nurses are one of the indispensable pioneers of the healthcare system in preventing the transmission of COVID-19, treating and caring for the infected elderly, and providing post-discharge rehabilitation. Because nurses fulfill the role of case managers during a pandemic, the protection of the elderly from contamination and the determination of appropriate nursing approaches are extremely important. Nurses maintain continuous care by providing professional care and service with effective time and resource management. Appropriate risk communication is the key to prepare the elderly for the risk and to eliminate unnecessary anxiety. Measures such as increasing awareness, paying attention to personal hygiene, maintaining social distance, and improving motivation should be taken. During this process, nurses should holistically evaluate the physical, psychological, and social health of the elderly and provide care accordingly.

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