

# A 15-day Working Shift Prevent the Cross-contamination of Coronavirus Disease-2019 in a Nursing Home in Turkey

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## Introduction

The new type of Coronavirus disease-2019 (COVID-19) outbreak had gained speed especially after spreading to the continents of Europe and America and reached a large number of deaths. Many countries declared suppression measures including social isolation, closed schools and workplaces and cessation of social activities. It has been observed that many of those who lost their lives due to COVID-19 were old aged people from nursing homes and chronic care centers (1).

In Turkey, reported number of COVID-19 positive cases are more than 260 thousand and number of deaths are over 6.100 with 91% recovery rate and 73 death/1 M population (2). With strict preventive measures began before the pandemic resulted with low COVID-19 cases and mortality rate in nursing homes across the country (3). This report showed data from a nursing home in Turkey, İstanbul Municipality Kayışdağı Darülaceze Directorate, one of the biggest in the country with 679 residents, which did not have any COVID-19 case during the first year of the pandemic (both employees and residents) with a working plan that successfully prevent cross-contamination.

### Istanbul Municipality Kayışdağı Darülaceze Directorate

A total of 679 residents (272 women and 407 men) are living in the nursing home. The mean age of the residents is 72.1±8.1 years (72.2±8.6 years for women and 71.8±6.2 years for men). 29% of the residents are independent, 39% are mild or moderately dependent and 32% are completely dependent. Figure 1 showed the prevalence of the chronic diseases. Staff included; 13 doctors, 104 nurses/other health personnel, 5

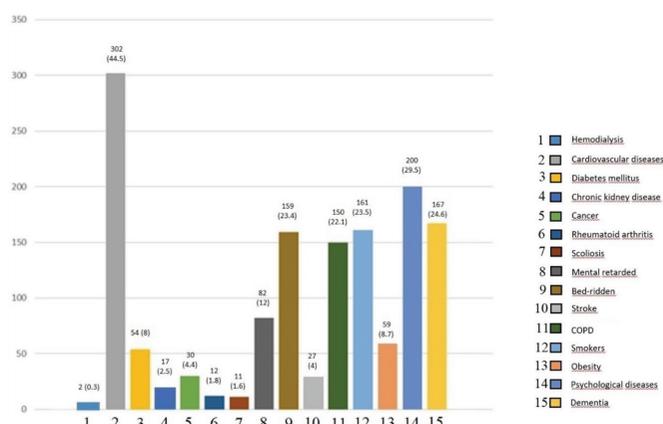


Figure 1. Chronic diseases of the residents; number (%)

COPD: Chronic obstructive pulmonary disease

psychologists, 2 sociologists, 243 care-givers, 97 other service providers and 40 personnel working in the kitchen.

### Preventive Measures During COVID-19 Pandemic

Before and during the first month of the pandemic:

- Announcement of a COVID-19 protocol that included preventive measures and algorithm for COVID-19 positive cases.
- Health personnel started to use protective equipment (gloves, face-shields, masks and disposable clothings).
- Alcohol-based disinfectants were placed in all entrances and floors.

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- Residents were not allowed outside except for medical reasons.
- Regular measurement of body temperature were made to all residents and the staff.
- New admissions were suspended temporarily. Visitors were not allowed unless there was an urgent condition.
- Residents with any clinical sign and symptoms were isolated in the infirmary, evaluated clinically and followed up by the doctors and nurses. If indicated, they were transferred to the hospital.
- Two separate infirmary wards were arranged for suspicious cases in order to perform polymerase chain reaction (PCR) tests, treatment and follow-up. Residents those came from hospitals were isolated in those wards for 2 weeks.
- İstanbul Municipality organised a special transportation for the staff in order to prevent contamination from public transport.

Next 11 months of the pandemic:

- District Health Directorate organised COVID-19 PCR testing to whole staff.
- A new organisation was initiated for the staff that included 15-days working periods. In every period, one group would be on duty and stayed in the institution while the other rested at home. All of the staff and the executive staff voluntarily accepted to stay in the institution throughout the pandemic in such an organisation.
- Before changing the working staff groups, COVID-19 PCR tests were repeated. Any personnel with a suspected clinical sign/symptom was not accepted to institution unless it was proven that he/she did not have COVID-19 infection.
- The institution made cooperations with the banks to maintain transport of salaries to the residents by the officials.
- The directorate made the daily shopping for the residents.
- In case of any medical emergency, patients were sent to pandemic-free hospitals.
- Inside the buildings, staff was not allowed to go beyond the areas reserved for them.
- In case of any contact with COVID-19 positive relatives, the employee would not be accepted to the institution before 14 days of isolation at home and approved negative PCR test result.
- In case of any suspicious symptom(s), the residents were transported to a specific ward that was formerly prepared for quarantine.

- Social distance (1.5 m) and face masks were mandatory in restaurants, parks and cafes. Social distance was 2 m for smokers.

### Psychosocial Support

Fifteen days working shift plan was important in overcoming the fear of death and abandonment among the residents. The use of a communication language including, "We are with you, you are not alone and unattended", was very important. In order to control the attitudes and behaviors of the residents towards the pandemic, psychological support interviews were conducted. Exercise and sports activities were carried out periodically.

15-days shifts increased the stress of the staff both physically and psychologically. Beneath social activities, they had group communication therapies with sociologists and psychologists. During the stay, one of the most important stress factor was separation from families. Solutions, such as giving parents' gifts to their children, birthday cakes and video conferencing decreased the stress of parents and children.

### Discussion

Since older adults living in chronic care facilities are mostly frail, they are vulnerable to infections such as COVID-19. Abrams et al. (1) reported COVID-19 positive cases in 2.949 (31.4%) nursing homes across US. Larger facility size, urban location, greater percentage of African American residents, non-chain status, and state were significantly ( $p < 0.05$ ) related to probability of having a COVID-19 case. According to data of the International Long Term Care Policy Network, COVID-related deaths among care home residents ranges from 24-82% in different countries (4).

During the COVID-19 outbreak, residents and the staff were isolated with many other preventive measures. Occupancy rates, increased number of testing, environmental and personal hygiene, social isolation, follow-up of signs and symptoms, ongoing education, supplies of personal protective equipment are important to decrease contamination risk. Centers for disease control recommends that nursing homes and assisted living facilities should follow strict isolation policies to protect the health of residents and staff (5).

On the other hand, outside contacts of the staff increased the risk in the nursing homes (6). Roxby et al. (7) highlighted the potential role of infected staff members in the cross-contamination. 28% of the staff reported symptoms potentially compatible with COVID-19 (7). Then periodical screening tests among healthcare personnel those are in close contact with the residents can decrease contamination.

In United States of America, Centers for Medicare and Medicaid Services announced recommendations for prevention of

COVID-19 in nursing homes (8). Tan and Seetharaman (9) reported successful management of COVID-19 prevention in a geriatric center by restriction of visitors, prescreening of visitors, and reduction in unnecessary transfer of patients.

During the pandemic other important problems were the treatment of acute medical conditions other than COVID infection and the complications of the chronic diseases. Our reports did not show any increase in the incidence of medical conditions other than COVID in that period. In case of hospitalization, COVID-free hospital wards were preferred. After hospitalization, residents were followed in the quarantine wards of the institution for 15 days.

Without any COVID-19 positive case in our nursing home, it seems that 15-days working shift plan with strict adherence to other preventive measures were successful. Although it is difficult to convince the staff to stay at institution for such a long period, collaboration of the executive staff and the psychosocial support improve their adherence and adaptation. They did not have extra payment for this plan.

**Keywords:** COVID-19, long-term care, prevention

### Ethics

**Peer-review:** Internally peer-reviewed.

### Authorship Contributions

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