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Extended Care for People after a Concluded Hospital Treatment for Coronavirus Disease

Zdenka Tičar[1]* and Klavdija Kobal Straus[2]

[1]*Department of Nursing Care Directorate, Ministry of Health, Ljubljana, Slovenia*
[2]*Department of Directorate for the Old Persons, Long-Term Care and Deinstitutionalization, Ministry of Solidarity-Based Future, Ljubljana, Slovenia*

Abstract

Introduction: The emergence of covid-19 called for a flexible response to the newly emerging situation, also in relation to providing healthcare for people after recovering from the coronavirus disease. This paper summarises the findings of the implementation of an extended care programme, which was established with the aim of providing support to patients who had recovered from SARS-CoV-2 infection and were unable to return to their home environment after hospital treatment due to insufficient self-care.

Methods: Descriptive and quantitative methods were used in the analysis. Correlation and regression coefficients were calculated to test the hypotheses. The analysis included data from 153 patients who were part of the extended care programme during the period from 21 April 2021 to 15 February 2022. Given the small amount of data and the uneven distribution, the non-parametric Spearman's rank correlation test was used to test the correlation of the individual data.

Results: Based on the analysis of the data on providing extended care, it was concluded that extended care contributed to a higher level of patients' independence. Patient progress on the Functional Independence Measure shows that the age of the patient and the structure of the services required by the patient are not directly correlated with the number of points achieved on the Functional Independence Measure at the end of extended care. The number of points achieved on the Functional Independence Measure at the end of extended care is statistically significantly correlated with the number of points achieved on the scale at the start of extended care. The results show that progress on the Functional Independence Measure is not statistically significantly related to the age of the patients included in extended care. Patients aged 85 years or older make comparable progress on the Functional Independence Measure as patients younger than 85 years. The results of the analysis show the need for systemic planning of rehabilitation programmes for all age groups, in particular tailored programmes for older people after hospitalisation, with the aim of strengthening their independence, enabling them to return to their home environment and to live as independent and active a life as possible.

Keywords: Covid-19 • Healthcare • Rehabilitation • Self-care ability • Functional independence measure

Introduction

The incidence of the coronavirus disease, its spread and consequences have required complex adjustments to the healthcare system [1]. For patients who had recovered from the SARS-CoV-2 infection and were unable to return to their home environment after hospital treatment due to insufficient self-care, new forms of care were introduced to support them in regaining the ability of self-care. The probability for a severe case of coronavirus disease and a longer period of returning to the status prior to coronavirus disease is proven to be associated with older age, the presence of multiple chronic noncommunicable diseases, obesity and associated mental health problems [2]. Long-term symptoms of coronavirus disease are associated with the severity of the disease and are significantly more common in women and in patients who have already been impaired in independently performing basic activities of daily living [3]. People with chronic noncommunicable diseases and two-thirds of people over 65 years of age are more likely to require hospital treatment and have poorer outcomes of treatment [4]. The consequences of a severe course of coronavirus disease can be present for months or years [5,6]. Research shows that after a coronavirus disease, four per cent of patients need tailored rehabilitation provided over a longer period of time. After being treated in intensive care, two-thirds of the patients require intensive rehabilitation [7], which calls for tailored healthcare treatment with the aim of deinstitutionalisation; i.e., supporting people in returning to their home environment after a coronavirus disease. The complexity of rehabilitation after coronavirus disease stems from the significant physical and mental losses [8,9]. Experience shows that after a coronavirus disease, many people suffer physical and mental health consequences, even if they did not require hospital treatment at the time of the coronavirus disease [5,6]. A study by Knight DRT, et al. of adult patients 3 to 6 months after a SARS-CoV-2 infection and with varying degrees of disease severity found that 34.9 per cent of patients (11.5 per cent of whom were treated in a hospital) had lasting consequences after the coronavirus disease, further demonstrating the need for new rehabilitation programmes [7].

Patients who have suffered a severe course of coronavirus disease or who have been treated in hospital intensive care units and those with a longer presence of coronavirus disease, often show a long-term inability to achieve the same level of self-care ability in basic activities of daily living as before the coronavirus disease.

Hospital treatment is limited to the minimum time necessary to perform the procedures or services (Compulsory Health Insurance Regulations, 2021). This means that if patients are assessed as clinically stable and a safe discharge to a home environment can be ensured, hospital treatment is often completed before all symptoms or signs of coronavirus disease have resolved [10]. At the same time, unnecessary prolongation of the hospitalisation reduces

***Address for Correspondence:** Zdenka Tičar, Department of Nursing Care Directorate, Ministry of Health, Ljubljana, Slovenia; E-mail: zdenka.ticar@gov.si*

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the chance of the patient's life returning to normal, while exposing them to the risk of other infections, including multidrug-resistant microorganisms [11].

In the Republic of Slovenia, as part of the intervention measures adopted to prevent the spread of COVID-19, the Additional Measures to Mitigate the Consequences of COVID-19 Act (Official Gazette of the Republic of Slovenia, No. 15/21, 112/21 - ZNUPZ, 206/21 - ZDUPŠOP and 141/22 - ZNUNBZ; hereinafter referred to as "ZDUOP"), also adopted a measure to ensure the provision of prolonged treatment for the purpose of providing nursing care, physiotherapy and occupational therapy to persons who have recovered from SARS-CoV-2 infection and who are unable to return to their home environment after the completion of their hospital treatment due to insufficient self-care (hereinafter referred to as "extended care").

Patients with confirmed infection or colonisation with multidrug-resistant bacteria (MDRO), which is often an associated complication of prolonged hospitalisation, especially when intensive care is needed, could, as opposed to a health resort treatment, also be included in extended care [12]. This posed a challenge for the placement or cohorting of patients, as the provider usually provided extended care in double rooms. Despite the challenges that accompanied the request by the Ministry of Health (hereinafter: Ministry) to provide extended care to patients with MDRO as well, the challenges were worth overcoming, as otherwise these patients would have been left without the possibility of stationary rehabilitation (or health resort treatment) simply because of the presence of an infection or colonisation with MDRO, the occurrence of which is mostly beyond their control, as it is often a collateral consequence of the medical treatment in hospitals [13].

On the basis of a public call for tenders by the Ministry in accordance with Article 54 of the ZDUOP, three providers were selected to provide extended care; these were Thermana Laško, DEOS Gornji Grad and Zdravilišče Dobrna (hereinafter referred to as the extended care provider). During the implementation of the extended care programme, the number of bed capacities was adjusted to the number of patients with coronavirus disease undergoing inpatient treatment. During the period of implementation of the extended care programme, up to a maximum of 60 bed capacities per day were simultaneously provided for the purpose of extended care.

Including patients in extended care was regulated by the Regulation on Providing Extended Care for People Who Have Recovered from a SARS-CoV-2 Infection (2022) (hereinafter: the Regulation). The Regulation set the criteria and procedures for the transfer of patients to extended care. On the basis of the Criteria for Assessing Eligibility for Extended Care (hereinafter the Eligibility Criteria), discharge documentation was prepared, which was the basis for the transfer of the patient to an extended care provider. The Eligibility Assessment Criteria stipulated that the patient's condition must be stable, that the patient does not require intravenous therapy and no more than 3 litres of oxygen per minute, that the patient has rehabilitation potential and that the patient consents to being admitted to extended care. In order to ensure a high quality and safe transition of the patient between different healthcare providers and to ensure the continuity of care, the Regulations also provided for a Nursing Service Report as part of the mandatory documentation at the time of transfer of the patient, which was annexed to the Regulations and was as such the same for all referring hospitals. Extended care was provided for up to 30 days for each patient, based on the assessment of the person in charge at the extended care provider, with the possibility of an extension for a further 30 days. Extended care was provided on the basis of the patient's individual treatment plan. The plan included an assessment of the patient's condition in terms of activities of daily living, treatment goals, a plan for providing the necessary services and an assessment of the impact of the services provided. The extended care programme started on 21 April 2021. The analysis reported in this paper includes data from 153 patients who completed the extended care programme by 15 February 2022.

The functional independence of patients eligible for extended care was assessed on admission and on discharge from extended care using the Functional Independence Measure (FIM). The rating scale is based on the conceptual framework of the International Classification of Impairments, Disabilities and Handicaps (ICIDH-2) [14], which is most commonly used to assess the outcome of rehabilitation and is also considered a reliable and valid instrument for assessing the functional independence of the patient by Petkovšek-Gregorin and Mali [15]. In Slovenia, the FIM is used as a reference indicator of the effectiveness of rehabilitation. The motor subscale measures deviations in thirteen items and the cognitive subscale in five items. All items are scored in seven points, which means that if the patient is fully independent, he or she can achieve a total of 126 points on the FIM. Based on a study by Granger CV, et al. [16], it was found that a 1-point improvement in the total score from 61 to 126 means that a person assessed with a 1-point improvement on the FIM on average requires 2.19 minutes less assistance from another person per day.

The data presented in this article were collected from reports by three extended care providers. The extended care providers reported daily bed occupancy and prepared a daily report of services provided for each patient.

The aim of extended care was to ensure the continuity of services over a longer period of time after the end of the hospital stay, leading to a rapid improvement of the patient's health and self-care ability and the possibility of them returning to the home environment.

The aim of the study was to determine the patient's progress at the end of extended care, the impact of the patient's age on the functional independence outcome, functional independence outcome in relation to the duration of extended care and the patient's condition at the time of admission to extended care.

The following hypothesis H1 was formulated: Patients in extended care aged 85 years and older make comparable progress according to FIM to patients aged under 85 years, which this study aimed to confirm or refute.

Methods

Both descriptive and quantitative methods were used in the analysis. Correlation and regression coefficients were calculated to test the hypothesis. Given the small amount of data and the uneven distribution, the non-parametric Spearman's rank correlation test was used to test the correlation of the individual data. A regression analysis was performed to determine which variable (gender, age, length of extended care and services received) had the greatest impact on the patient's progress during extended care.

The data on the services provided to each patient were entered by the extended care providers in an Excel spreadsheet input form prepared by the Ministry for the purpose of monitoring extended care (hereinafter: the input form). The analysis included data on 153 patients who completed extended care between 21 April 2021 and 15 February 2022. The input form included data on the length of the hospital stay, the assessment of their condition on admission to extended care, the extended care services provided according to the code system set by the Ministry and the assessment of the patient's condition according to FIM on admission to extended care and prior to discharge from extended care.

Results

The analysis of patient data was carried out based on the reports of the extended care providers. The analysis included the data of patients whose input form was filled out in full. The aim of the research was using information on patients' progress to determine the effectiveness and suitability of the extended care programme, the suitability of services provided for the patients and the suitability of the extended care duration. The analysis included the data of 153 patients together with the code of the extended care provider. The average age of the patients in extended care was 65.05 years. The youngest patient was 27, the oldest 90 years old. The population of the patients whose data was analysed was 97 (63.40 percent) male patients and 56 (36.60 percent) women. The average length of hospitalisation was 43.84 days with 269 days being the longest hospitalisation duration and 7 day the shortest.

Based on the duration of hospitalisation, the patients' data were divided

into two categories: those who were in the hospital for 100 days or more and those who were in the hospital for up to 100 days. Out of 153 patients, 9 patients (2 women and 7 men) were in the hospital for 100 days or more. The age of the patients with the hospitalisation of 100 days or more ranged from 54 to 67 (average 60.33), the average FIM at admission to extended care was 71.33. The lowest FIM score for a patient admitted to extended care was 45 and the highest was 109. At the end of extended care, the average FIM score was 107.22. The patient with the lowest FIM score on admission scored 81 points according to FIM at the end of extended care and the patient with the highest FIM score on admission scored 126 points according to FIM at the end of extended care (Figure 1).

A person entitled to extended care could only benefit from it for up to 30 days. The duration could be extended for up to a further 30 days, based on the assessment of the person in charge at the extended care provider. Out of a total of 153 patients, 30 patients (19.61%) were granted extended care beyond 30 days. Of the 30 patients whose treatment was extended beyond 30 days, 16 (10.46%) were included in it for 59 or 60 days. Fourteen patients who were provided with extended care beyond 30 days completed the extended care before 59 days expired, they completed it in the time period between day 31 and day 58. The differences in the reasons for ending the extended care before the period of 30 or 60 days cannot be explained because the data were not monitored in a way that would allow this.

The average difference in FIM scores between the admission and the end of extended care was 23.91 points. The highest difference in score between admission and discharge was 69 points for a patient who had been in extended care for 60 days. The highest difference in FIM scores for a patient who had been in extended treatment for 30 days was 66 points.

The two patients (male) who did not show progress according to FIM had already scored 126 according to FIM on admission, so no progress can be shown according to FIM. The first patient was 48 years old, in hospital for 35 days and in extended care for 22 days. During extended care, he received on average 1.82 physiotherapy services, 0.68 occupational therapy services and 11.50 nursing services per day. The second patient was a male aged 55 years, in hospital care for 55 days and in extended care for 30 days. During extended care, he had an average of 2.33 physiotherapy services, 0.63 occupational therapy services and 4.00 nursing services per day.

The data collected were used to determine whether there was a statistically significant correlation between the patient's gender and the FIM score at admission and at the end of extended care. Data from 92 males and 54 females were included in the analysis (in seven cases gender was not recorded). Based on the result of the Mann-Whitney U test (U=2503.50; P=0.654), it was concluded that gender did not have a statistically significant effect on the achievement of a higher positive difference between admission and final progress assessed according to FIM scale.

After 30 days of extended care, twenty-seven patients (17.64%) out of a total of 153 made progress between one point or less than ten points according to FIM. Of the 27 patients, ten patients (37.04 per cent) scored more than 115 points according to FIM at the time of admission to extended care and scored

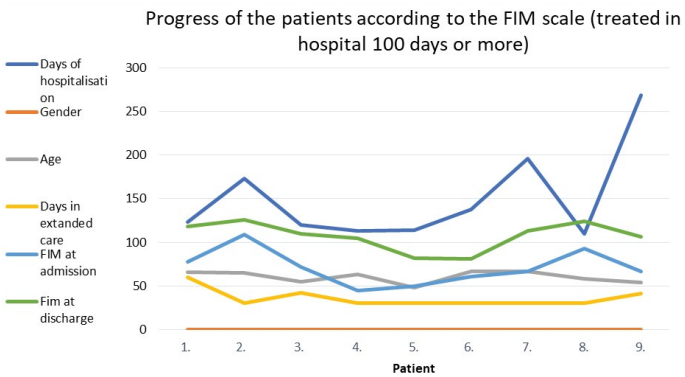

Figure 1. Patient progress. Source: Extended care providers report, ministry of health database (2022).

the highest possible score according to FIM at the end of extended care, which is 126 points. The difference between the FIM score at the start of extended care and at the end of extended care was therefore less than ten points, as the patients scored the highest possible score on the FIM rating scale. Seventeen out of 27 patients (62.96%) scored less than 115 points according to FIM at the start of extended care. Among the 17 patients, six were female (35.30 per cent) and 11 were male (64.7 per cent). The gender structure of the 17 patients who did not achieve more than 10 points of progress according to FIM did not differ significantly from the gender structure of the population of all 153 patients whose data were included in the analysis.

The data show that the average age of patients who did not achieve more than 10 points of progress according to FIM was 67.24 years, which is not significantly different from the overall average age of all 153 patients (65.05 years). The average length of hospitalisation for patients who did not achieve more than 10 points of progress according to FIM was 31.88 days, which is significantly shorter than the average length of hospitalisation (43.84 days) for all patients whose data were included in the study. The average FIM score on admission to extended care was 78.18 points and on discharge 85.88 points, indicating an improvement of 7.70 FIM points on average.

The Mann-Whitney U test was also used to determine the differences in FIM scores at the start and at the end of extended care according to the age of the patients, comparing the population of patients aged 85 years or older with the population of patients younger than 85 years. The Mann-Whitney U test result (U=295.00; P=0.009) showed that patients aged 85 years or older entered extended care with lower FIM scores compared to younger patients (Table 1).

Due to the lower FIM scores at the start of extended care in patients aged 85 years or older, it was analysed whether there were statistically significant differences in the progression of patients according to FIM over the same period. The analysis included data from 137 patients aged 85 years or younger and nine patients aged 85 years or older (for seven patients, the age of the patient was not reported by the extended care provider). Based on the Mann-Whitney U test (U=584.50; P=0.794), it was determined that on average, there were no statistically significant differences in FIM progress at the start and at the end of extended care in patients aged 85 years or older compared with younger patients.

Based on these findings, the age limit for differences in FIM progress was lowered to age 65 years or older and the FIM scores of this group were compared with those of the group of patients younger than 65 years. The analysis included data from 85 patients aged 65 years and over and 61 patients aged less than 65 years. In seven cases, the age of the patient was not reported by the provider of extended care. The variables used were the FIM score at the start of extended care and the FIM score difference at the end of extended care. Based on the finding that the variables were not approximately normally distributed (P<0.001), Mann-Whitney U test (U=1612.50; P=0.000) was used, which showed that on average, people aged 65 years or older enter extended care with lower FIM scores compared with younger people.

Given the lower FIM scores in patients aged 65 years or older, it was further investigated whether there were statistically significant differences in the progression of patients according to the FIM scale as assessed at discharge from extended care. Based on the result of the Mann-Whitney U test (U=2088.00; P=0.045), it was determined that on average, compared with younger patients, patients aged 65 years or older had a greater positive difference in FIM scores at the start and at the end of extended care. Comparing the FIM scores at the start and at the end of extended care allowed the calculation of the time savings when assistance from another person is provided. Granger CV, et al. state that a difference of 1 point according to FIM means a higher level of independence, or that the person needs 2.19 minutes less help from another person per day [16]. The provision of extended care in a 30-day period resulted in patients needing on average 55.43 minutes less assistance per day from other persons to perform basic or supportive daily tasks after extended care was completed. Patients who received 60 days of extended treatment required on average 1 hour and 3 minutes less assistance from other persons to perform basic or supportive daily tasks, according to the FIM score.

Table 1. Correlation between FIM scores and patients' age.

Number of Patients According to Patient Age		Average FIM Score	Standard Deviation	Mean Range	Mann-Whitney U	P
Under 85	137	84.68	26.06	75.85	295.000	0.009
Over 85	9	61.78	20.50	37.78		

Source: Extended care providers report, Ministry of Health database (2022).

The recommended staffing norms for 20 patients per occupational group for extended care providers was ten nursing technicians (52.63% employees in accordance with the staffing norm), three registered nurses (15.79%), four (21.05%) registered physiotherapists and two (10.53%) occupational therapists.

The analysis of the data on services provided shows that 153 patients received a total of 58,160 services during the analysed period, of which 43,838 were nursing services (75.37 per cent of the total services provided), 10,841 were physiotherapy services (18.64 per cent of the total services provided) and 3,481 were occupational therapy services (5.99 per cent of the total services provided).

During the extended care period, the patient with the highest number of nursing services received an average of 9.66 nursing services per day. The highest number of nursing services per day for one patient was 24.27. Two patients did not receive any nursing services during their extended care. The average number of physiotherapy services per patient was 2.57 per day. The patient with the highest number of physiotherapy services received 7.17 services per day and the patient with the lowest number of physiotherapy services received 0.47 services per day. All patients received physiotherapy services for the duration of extended care. The average number of occupational therapy services per patient in extended care was 0.82 (maximum 1.83 services per day per patient and minimum 0.30 services per day). None of the patients were without occupational therapy services.

The data show that the biggest difference between the recommended staffing structure according to the staffing norm for the provision of extended care and the services provided to patients was in occupational therapy. The occupational therapy services in the recommended staffing structure for 20 patients are provided by two occupational therapists, which represents 10.53% of the staffing norm. Occupational therapy services (3,481) represent 5.99% of the total of 58,160 services provided. In the recommended structure for 20 patients, physiotherapy services are provided by four physiotherapists, representing 21.05% of the staffing standard. Physiotherapy services (10,841) represent 18.64% of the total 58,160 services provided. In the recommended structure, nursing services are provided by ten nursing technicians and three registered nurses, representing 75.37 per cent of the staffing standard and nursing services (43,838) represent 75.37 per cent of the total of 58,160 services provided.

The recommended staffing norm for physiotherapy and occupational therapy shows that the planning of the extended care programme took into account that each patient could receive on average approximately two hours of services per day.

For the purpose of data analysis, based on the number of services provided, the patient data were grouped according to the progression in FIM scores over the 30 days of extended care, as follows: Group 1 with 0 to 9 points (30 patients were classified in this group), Group 2 with progress in FIM scores of 10 to 19 points, Group 3 with 20 to 29 points, Group 4: patients with a FIM score progress of 30-39 points and Group 5: patients with a FIM score progress of 40 points or more (the highest progress score was 69 points).

Patients with the lowest score progress; i.e. up to nine points, on average received the fewest (6.88 per day) nursing services, while patients with the highest score progress; i.e. above 40 points, received the most (13.84 per day) nursing services. Thus, patients with the lowest FIM progress received 51.29% fewer nursing services than patients with the highest progress. Patients with the lowest progress in FIM scores on average received 3.06 physiotherapy services and 1.01 occupational therapy services per day. Patients with the highest progress received 1.97 physiotherapy services and 0.66 occupational therapy services per day. Patients with less progress received 35.62% more physiotherapy services and 34.65% more occupational therapy services per day. Patients in the second group (progressing 10 to 19 points) received an average of 8.84 nursing services per day, those in the third group (progressing 20 to 29 points) 10.55 and those in the fourth group (progressing 30 to 39 points) 9.03 services per day. Patients in group 3 had fewer nursing services than those in group 2, 16.21% fewer than those in group 2 and 14.41% fewer than those in group 4, indicating a disproportionality in the progress of patients in extended care. In the provision of physiotherapy services, patients in group 2, 3 and 4 had 2.54, 2.62 and 2.6 services per day, respectively, representing 3.05% fewer services in group 2 and 0.75% fewer services in group 4 than those in group 3. Physiotherapy services were provided at a rate of 3.54, 3.62 and 3.6 services per day, respectively. For occupational therapy, an average of 0.81 services per day were provided in group 2 and 0.82 services per day in groups 3 and 4. For occupational therapy, the average number of services provided per day was 1.22 per cent lower only in group two.

Given the results of the basic statistics, a further aim was to test the correlation between the number of nursing services received and progress in FIM scores at the start and at the end of extended care. To determine the correlation, Spearman's rank correlation coefficient was used. The result ($r=0.446$; $P=0.000$) shows that there is a statistically significant positive correlation between progress in FIM scores at the start and at the end of extended care and the provision of nursing services. People who on average were provided a higher number of nursing services per day achieved better progress in FIM scores at the end of extended care.

Given the findings on the average number of nursing services per day, Spearman's rank correlation coefficient was used to determine the correlation between the number of nursing services and the age of the patients. It was determined that there is no approximate normal distribution ($P<0.001$). The Spearman correlation coefficient ($r=0.200$; $P=0.013$) showed that there is a statistically significant positive correlation between age and receipt of nursing services, namely that higher age is associated with higher number of nursing services received.

The influence of the variables on progress according to FIM was determined by regression. The variables included were the total FIM score at the end of extended care, gender, the total number of occupational therapy, physiotherapy and nursing services received in 30 days and FIM at the end of extended care. It was determined that only the FIM at the start of extended care has a statistically significant effect on the difference between the FIM at the start of extended care and the FIM at the end of extended care and the other included variables do not have any effect on the patient's progress.

Discussion

The physical, cognitive and mental limitations resulting from a more severe course of coronavirus disease suggest the need for longer and more personalised forms of rehabilitation services [17]. Inclusion in prolonged treatment was decided by the team of the hospital where the patient was treated for coronavirus disease, according to the Eligibility Assessment Criteria. According to the guidelines, before discharging them from the hospital, the hospital provider should have assessed the patients according to FIM. The data showed that patients were generally not assessed according to FIM at the time of hospital discharge. The FIM assessment was performed by the extended care provider at the time of admission to extended care. Comparison of FIM scores between hospital care and extended care providers is not possible due to data gaps. The FIM reassessment of the patient was carried out by the extended care provider before the end of the 30 days or

before the end of the extended care, and, in the case of an extension of the extended care, also at the end of the extended care. The majority of patients were included in the extended treatment up to 30 days (80.39%). Extended treatment up to a total of 60 days was provided to 19.61% of patients, which represents a lower percentage of patients included in the extended treatment.

According to the data collected, 10.46% of the patients were provided with extended care for the maximum possible duration, i.e. 60 days. 9.15% of the patients were included in the extended care between 30 and 58 days. Based on the above data, it can be concluded that for the majority of patients, future programmes of this kind would be sufficient for up to 30 days. The analysis of the FIM score data shows that there were two patients who were included in extended care and who scored all FIM scores on admission to extended care. This raises the question of how they could have been transferred to extended care on the basis of the Eligibility Assessment Criteria and, furthermore, on the basis of what assessment were they provided with nursing, physiotherapy and occupational therapy services. The available data do not allow for a more detailed analysis in this part; however, it raises the question of the need to introduce additional scales to assess progress in this type of patients.

The maximum difference in the FIM at the start and at the end of extended care, in the period up to 30 days of extended care, was 66 points and the minimum (for a patient who did not achieve all the points) was 1 point. For patients who were included in extended care up to 30 days and achieved a FIM improvement of 1 out of 10 points, a significant correlation between FIM progress, gender and age was not demonstrated, there was, however, a greater difference in FIM improvement according to the average length of hospitalisation, which was 11.96 days shorter in patients with lower FIM progress.

The provision of extended care has contributed to the increased independence of people in extended care and to their ability to resume living as independently as possible in their home environment. Higher levels of independence also mean lower burdens on the health, social care and long-term care systems, or less need to involve informal care providers. Informal care providers are most often women, which are often reflected in their transition to part-time work, resulting in lower incomes and higher risk of poverty and poorer health [18-21]. It is estimated that patients after the end of the extended care required on average 49.23 minutes less help from other persons per day as they would have, had the improvement in their ability to self-care not occurred. The improvement in self-care does not increase proportionally with the increase in the duration of the extended care beyond 30 days, therefore, when planning future rehabilitation programmes, it seems reasonable to plan the programmes for up to 30 days. The data show that more men than women were enrolled in the extended treatment programme. The reasons for this gender structure of the patients cannot be explained on the basis of the monitored data. Also, the monitored data on the extension of the extended treatment beyond 30 days, does not show a correlation between variables such as length of hospital stay and age of the patient, from which it could be inferred which group of patients will need to receive extended care for longer. The possibility of extending the extended care was decided by the extended care provider in collaboration with the patient, based on the patient's assessed rehabilitation potential. The data show that older age does not significantly affect progress according to FIM and that progress in self-care ability is possible in all age groups. When entering extended care, patients aged 65 years or older had a lower FIM score compared to patients younger than 65 years; however, at the end of extended care, they have shown a higher progress in FIM scores compared to patients younger than 65 years. The data also show that patients aged 85 years or older make comparable progress in FIM scores to patients under 85 years of age. This finding supports research hypothesis H1: Patients in extended care aged 85 years and older make comparable progress according to FIM to patients aged under 85 years. This also demonstrates that there is a strong case for designing systemic solutions that support particularly older people in strengthening their independence, which further justifies the provision of services to strengthen and maintain independence as part of the entitlements under the Long-Term Care Act (2021).

Conclusion

Coronavirus disease can have both direct and indirect negative effects on an individual's health. Patient management should be approached in a multidisciplinary and systematic manner, also with the aim of reducing the risk of complications in patient management. The absence of appropriate supportive measures for patients in the period when hospitalisation is no longer necessary may unnecessarily prolong the duration of hospitalisation. Prolonging hospitalisation beyond the period when hospital treatment is no longer necessary means unnecessary occupancy of beds intended for hospital treatment and also a higher risk of MDR infections, especially in older immunocompromised persons. As a consequence, it has negative effects on the patient's self-care ability and long-term increased functional dependence, which patients are often unable to manage without extensive professional support in the home environment, thus posing a risk to the re-normalisation of life in the out-of-hospital setting.

The implementation of extended care was set up with the aim of addressing the emerging challenges in relation to covid-19, especially aiming to support older people living in their own homes. The implementation of extended care enabled patients to receive an extended range of support following hospitalisation for coronavirus disease, with the aim of strengthening their self-care ability and enable them to return to their home environment. The implementation of extended care was provided through a direct transition from hospital treatment to treatment with an extended treatment provider, which ensured the possibility of uninterrupted treatment, continuous services and reduced the administrative burden otherwise associated with the procedures for deciding eligibility under the compulsory health insurance for treatment in a health resort. The results of the data of the persons involved in the implementation of extended care show that targeted services can contribute to a higher level of independence of persons after the end of hospitalisation, regardless of the age of the patient.

Longer illness often results in diminished self-care ability. The results show that interventions targeting the promotion and maintenance of independence show comparable progress in FIM scores for people aged 85 years and over compared to those aged under 85 years. This demonstrates the need for systemic planning of rehabilitation programmes for all age groups, in particular tailored programmes for older people after hospitalisation, with the aim of improving their independence, enabling them to return to their home environment and to play as independent and active a role as possible in their private and social life and consequently reducing the burden on the health, social care, long-term care and informal care systems.

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None.

Conflict of Interest

None.

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