**The Effect of Telerehabilitation on Improving Exercise Capacity and Quality of Life in Patients with COVID-19; An Experimental Study.**

**Abstract**

**Background**

Telerehabilitation has emerged as an effective solution during the COVID-19 pandemic, providing convenient access to rehabilitation services and improving exercise capacity and quality of life for patients. By utilizing technology like videoconferencing and remote monitoring, healthcare professionals can deliver personalized exercise programs, offer real-time feedback, and monitor progress. This study aimed to evaluate the impact of telerehabilitation on COVID-19 survivors' lung functional deficits.

**Method**

A total of 150 participants were randomly assigned to either the intervention or control group. The intervention group underwent a 4-week tele-rehabilitation program, while the control group received routine advice. The program included respiratory training, aerobic and resistive exercises with specific intensity, frequency, and duration. A physical medicine and rehabilitation specialist evaluated the participants twice a week through phone calls.

**Results**

After the intervention, significant improvements were observed in the intervention group compared to the control group. The intervention group showed better results in the six-minute walking test, indicating improved physical endurance. They also reported higher scores in the SF-12 questionnaire, indicating better overall health-related quality of life. Oxygen saturation levels (SPO2) and the reduction of SPO2 after the six-minute walking test also showed significant improvements in the intervention group.

**Conclusion**

These findings suggest that telerehabilitation can effectively improve exercise capacity, enhance quality of life, and improve respiratory function in COVID-19 survivors. However, further research with larger sample sizes is needed to validate these results and explore the underlying mechanisms. Telerehabilitation has proven to be an essential tool in optimizing the rehabilitation process and empowering patients in their recovery journey during the COVID-19 pandemic.

**Table**. The inter-group analysis of outcome measures among two groups in the initial and after 4 weeks’ assessment

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | Intervention group  mean ± Std. deviation | Control group  mean ± Std. deviation | P-value |
| Initial assessment | **6MWT (m)** | 351.0 ± 102.0 | 316.93 ± 99.4 | 0.146 |
| **SF-12** | 28.2 ± 3.3 | 27.1 ± 4.1 | 0.314\* |
| **SpO2 before 6MWT (%)** | 93.2 ± 2.7 | 93.5 ± 2.1 | 0.782\* |
| **Reduction of SpO2**  **after 6MWT (%)** | 3.8 ± 3.2 | 4.2 ± 3.0 | 0.416\* |
| After 4 weeks | **6MWT (m)** | 395.9 ± 102.9 | 335.47 ± 98.5 | 0.011 |
| **SpO2 before 6MWT (%)** | 95.1 ± 1.2 | 93.9 ± 1.9 | 0.004\* |
| **Reduction of SpO2**  **after 6MWT (%)** | 1.2 ± 1.1 | 2.8 ± 1.9 | < 0.001\* |
| **SF-12** | 36.1 ± 6.3 | 28.9 ± 4.2 | < 0.001\* |

\*The P-value is based on the Mann-Whitney test. 6MWT: 6-minute walked test, SpO2: saturation of peripheral oxygen, SF-12: short-form survey 12