

1.

1. First Name

Zacarías

2. Last Name

Sánchez

3. Academic Degree(s)

Professor PhD

4. Department/Institution

Catholic University of Avila

5. Email Address

zacarias.sanchez@ucavila.es

6. Co-author(s) names (first and last) and degrees

- Jorge Velázquez Saornil. PhD. Catholic University of Ávila. Ávila. Spain. jorge.velazquezaornil@ucavila.es <https://orcid.org/0000-0003-2608-2019>
- Ana Martín Nieto. PhD. San Juan de Dios Foundation, San Rafael Health Sciences Campus. Madrid. Spain. amartinn@comillas.edu <https://orcid.org/0000-0003-0252-8557>
- Ana Jiménez Lobo. MSc. Catholic University of Ávila. Ávila. Spain. anajim27777@gmail.com
- Angélica Campón Chekroun. MSc. Catholic University of Ávila. Ávila. Spain. angelica.campon@ucavila.es <https://orcid.org/0000-0001-7569-2759>
- Raúl Frutos Llanes. PhD. Catholic University of Ávila. Ávila. Spain. raul.frutos@ucavila.es <https://orcid.org/0000-0001-6399-3861>
- José Manuel Barragán Casas. PhD. Catholic University of Ávila. Ávila. Spain. jmanuel.barragan@ucavila.es <https://orcid.org/0000-0003-2616-8306>
- David Rodríguez Sanz. PhD. Universidad Complutense de Madrid, Madrid, Spain. davidrodriguezsan@ucm.es <https://orcid.org/0000-0002-3629-6590>

7. Funding Source (if applicable)

None

8. Manuscript Title

Effects of a respiratory and neurological rehabilitation treatment plan in postCovid-19 affected university students. Randomized clinical study.

9. Abstract (500 words maximum)

Objetives

Reduce dyspnoea, increase exertional capacity, increase vital capacity and respiratory muscle strength. It also increases olfactory and taste sensitivity in post-SARS-CoV-2 patients.

Design

A randomized controlled experimental.

Setting

The Laboratories of the Catholic University of Avila.

Participants

220 patients agreed to enter the study, in which 200 were completed for the following inclusion criteria, in the age range of 18 to 45 years, medically diagnosed with COVID-19 with more than 5 months of evolution, with perceived dyspnoea or fatigue, problems in smell and taste perception were included.

Interventions

A treatment plan was carried out for 31 days, the intervention group received olfactory-gustatory, respiratory treatment using the Powerbreathe Plus® tool and aerobic treatment, while the control group did not receive any therapy.

Results

200 patients (mean age 28.25 ± 9.17 , female 71% - male 49% and mean time of diagnosis after SARS-COV-2 month 7.26 ± 1.18) were divided into intervention group (n=100) and control group (n=100). Improvement was observed in spirometric variables; forced vital capacity ($3,89 \pm 0,84$; $p < 0,03$), ratio between both ($81,85 \pm 8,27$; $p < 0,03$), peak inspiratory pressure ($94,96 \pm 18,34$; $p < 0,03$); changes in dyspnea and fatigue, modified Borg scale ($1,38 \pm 0,98$; $p < 0,01$) and modified Medical Research council ($0,35 \pm 0,50$; $p < 0,01$); finally changes were found in the neurological variables, in the questions of Singapore Smell and Taste Questionnaire, How was your sense of smell after treatment? ($8,07 \pm 1,75$; $p < 0,01$) and How is your sense of taste after treatment? ($9,03 \pm 0,80$; $p < 0,01$).

Conclusion

The implementation of a respiratory rehabilitation treatment plan with the Powerbreathe Plus® device, aerobic exercise and neurorehabilitation with olfactory and gustatory training, is a therapeutic option against respiratory and neurological sequelae in patients who have suffered such sequelae due to the SARS-CoV-2 virus.

clinicaltrials.gov: NCT05435443.

10. Key Words (must list at least 1 up to 6 maximum)

- 1 : Covid-19
- 2 : respiratory therapy
- 3 : physiotherapy
- 4 : neurorehabilitation
- 5 : dyspnoea

11. Key Implementation theories or frameworks used in this manuscript

The article followed the CONSORT methodology, with ethical approval and its clinicaltrials; in which respiratory treatment was carried out with specific tools and neurological treatment to improve the sense of smell and taste.

It has been demonstrated that by following a rehabilitation treatment plan, this type of patients will considerably improve their consequences after the disease.

2. Thank You!

New Send Email

Feb 03, 2023 05:57:47 Success: Email Sent to: CMendelsohn@aapmr.org,munderwood@aapmr.org
