



Hospital physiotherapy practice in times of COVID-19—lessons to advance

Caio C A Morais^{1,2}, Shirley L Campos¹, Armêla Dornelas de Andrade¹

Cardiorespiratory and intensive care physiotherapy are well-established hospital specialties that have two major aims: 1) preventing and mitigating adverse effects related to prolonged bed rest; and 2) maintaining and improving respiratory function. As an emerging specialty, recommendations for respiratory and physical interventions for hospitalized patients have been continuously developed following the growth of scientific evidence.^(1,2)

Recently, the waves of COVID-19 infection and the increase in the number of hospitalized patients with severe disease have challenged physiotherapists worldwide. As a result, specialized societies have released recommendations to guide physiotherapists.^(3,4) However, as of now, we are unaware of how physiotherapists have provided care to hospitalized patients with COVID-19.

In the current issue of the *Jornal Brasileiro de Pneumologia*, Dias et al.⁽⁵⁾ described data regarding the referral and physiotherapy practice for patients with COVID-19 admitted to both the ICU and the ward for the first time. The study has many provocative results and reflections on post-pandemic professional practice.

During five months in 2021, the investigators collected data using a 50-item self-administered survey, obtaining 485 completed questionnaires (completion rate of 76%). The respondents represented all regions in Brazil, mostly from the southeast (61%) and the northeast (21%). Most respondents (80%) had some sort of a specialization degree in in-hospital physiotherapy. However, only 13% were board-certified specialists by the Brazilian Federal Council of Physical Therapy and Occupational Therapy.

The authors found that the main reason for indication of physiotherapy in the ICU and in the ward was oxygenation improvement (> 80%), whereas avoidance of physical deconditioning was the least common reason (< 65%) for both mechanically ventilated patients and spontaneously breathing patients. The indication of mobilization for COVID-19 patients was remarkably lower when compared with that in a previous prospective study,⁽⁶⁾ which showed that approximately 90% of critically ill patients treated in Brazilian ICUs received mobilization therapy. The severity of respiratory symptoms in patients with COVID-19 might partially explain the lower number of indications for mobilization in order to prioritize respiratory assistance.

Another possible barrier to mobilization noted in the study by Dias et al.⁽⁵⁾ was the limited staff, because physiotherapists treated a median of 10 patients in

a six-hour shift. Although this number follows the minimum number recommended by the current Brazilian national legislation,⁽⁷⁾ we believe that delivering complete respiratory and mobilization treatment with this professional-to-patient ratio is difficult.

As Dias et al.⁽⁵⁾ stated, caring for 10 patients in a 6-h shift means that the physiotherapist had approximately only 30 minutes per patient. Therefore, the limited time of care may potentially affect the patient's therapeutic plan. The priority of treatments associated with the maintenance of life (e.g., respiratory support) is insufficient for improving survival and functionality, which encompass passive mobilization, strength training of upper and lower limbs, transferring the patient to a chair, walking, and functional activities.

Indeed, a survey from members of the Acute Care Section of the American Physical Therapy Association reported that insufficient staffing and training were the main barrier to providing ICU rehabilitation.⁽⁸⁾ Moreover, there is evidence demonstrating that the number of patients per physiotherapist is an independent predictor of out-of-bed exercising,⁽⁶⁾ and that a greater availability of physiotherapists (12 h/day vs. 24 h/day) may reduce the length of ICU stay and ICU costs.⁽⁹⁾

Another striking result in the study by Dias et al.⁽⁵⁾ was that the choice of respiratory interventions largely varied when compared with mobilization therapies. Even though important advances have been made in respiratory care, the rate of adherence to respiratory treatment considered effective was low. For instance, only 25% of the physiotherapists reported using "expiratory flow bias", a well-studied intervention for secretion removal in patients on mechanical ventilation.⁽¹⁰⁻¹²⁾ This fact may indicate that having a specialization degree did not prevent the underutilization of effective techniques.

This thought-provoking study⁽⁵⁾ revealed that physiotherapists on the front line in caring for patients with COVID-19 will most likely remain in the care of critically ill patients in the ICU and in the ward in Brazil. The need to standardize respiratory physiotherapy treatment and to revise work conditions is urged. Furthermore, physiotherapists should receive more stimuli to becoming board-certified specialists. Finally, professional associations, health managers, universities, and research institutions should discuss these results and take the next steps to dial in the evidence to improve patient treatment and outcomes.

1. Departamento de Fisioterapia, Universidade Federal de Pernambuco, Recife (PE) Brasil.

2. Laboratório de Investigação Médica em Pneumologia (LIM 09), Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo, São Paulo (SP) Brasil.

REFERENCES

- Gosselink R, Bott J, Johnson M, Dean E, Nava S, Norrenberg M, et al. Physiotherapy for adult patients with critical illness: recommendations of the European Respiratory Society and European Society of Intensive Care Medicine Task Force on Physiotherapy for Critically Ill Patients. *Intensive Care Med.* 2008;34(7):1188-1199. <https://doi.org/10.1007/s00134-008-1026-7>
- França EÉ, Ferrari F, Fernandes P, Cavalcanti R, Duarte A, Martinez BP, et al. Physical therapy in critically ill adult patients: recommendations from the Brazilian Association of Intensive Care Medicine Department of Physical Therapy. *Rev Bras Ter Intensiva.* 2012;24(1):6-22. <https://doi.org/10.1590/S0103-507X2012000100003>
- Felten-Barentsz KM, van Oorsouw R, Klooster E, Koenders N, Driehuis F, Hulzebos EHJ, et al. Recommendations for Hospital-Based Physical Therapists Managing Patients With COVID-19. *Phys Ther.* 2020;100(9):1444-1457. <https://doi.org/10.1093/ptj/pzaa114>
- Musumeci MM, Martinez BP, Nogueira IC, Alcanfor T. Physiotherapy techniques used in the intensive care unit for the assessment and treatment of respiratory problems in patients with COVID-19. *Assobrafir Ciencia.* 2020;11(1):73-86. <https://doi.org/10.47066/2177-9333.AC20.covid19.007>
- Dias LMS, Guimaraes FS, Leite CF, Paro FM, Annoni R, Oliveira ACO, et al. Physiotherapy practice for hospitalized patients with COVID-19. *J Bras Pneumol.* 2022;48(4):e20220121.
- Timenetsky KT, Neto AS, Assunção MSC, Taniguchi L, Eid RAC, Corrêa TD, et al. Mobilization practices in the ICU: A nationwide 1-day point- prevalence study in Brazil. *PLoS One.* 2020;15(4):e0230971. <https://doi.org/10.1371/journal.pone.0230971>
- Brazil. Ministry of Health. National Health Surveillance Agency. Resolution-RDC No. 7, of February 24, 2010. *Diário Oficial da União* No. 37 of February 25, 2010.
- Malone D, Ridgeway K, Nordon-Craft A, Moss P, Schenkman M, Moss M. Physical Therapist Practice in the Intensive Care Unit: Results of a National Survey. *Phys Ther.* 2015;95(10):1335-1344. <https://doi.org/10.2522/ptj.20140417>
- Rotta BP, Silva JMD, Fu C, Goulardins JB, Pires-Neto RC, Tanaka C. Relationship between availability of physiotherapy services and ICU costs. *J Bras Pneumol.* 2018;44(3):184-189. <https://doi.org/10.1590/s1806-37562017000000196>
- Volpe MS, Adams AB, Amato MB, Marini JJ. Ventilation patterns influence airway secretion movement. *Respir Care.* 2008;53(10):1287-1294.
- Li Bassi G, Saucedo L, Marti JD, Rigol M, Esperatti M, Luque N, et al. Effects of duty cycle and positive end-expiratory pressure on mucus clearance during mechanical ventilation. *Crit Care Med.* 2012;40(3):895-902. <https://doi.org/10.1097/CCM.0b013e318236efb5>
- Volpe MS, Guimarães FS, Morais CC. Airway Clearance Techniques for Mechanically Ventilated Patients: Insights for Optimization. *Respir Care.* 2020;65(8):1174-1188. <https://doi.org/10.4187/respcare.07904>