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COMMENT

Functional status in the COVID-19 era: ALERT, ALERT, ALERT!

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The mapping review by Simonelli and coworkers[1] in this issue of Pulmonology raises awareness of a highly meaningful domain for patients with COVID-19, i.e., functional status, which seems to need urgent attention from daily routine respiratory assessments, independently of disease severity and care setting.

COVID-19 has suddenly affected millions of people worldwide [2] with resource constraints in healthcare systems. Research and clinical focus have been placed on the pathophysiology and screening of the disease, to prioritise those in need of hospitalisation. However, a patient centred assessment, beyond the pathophysiological aspects of the disease, is needed to reveal the unique needs of people with COVID-19 and informal caregivers, guide decision-making with multidisciplinary teams on the most appropriate interventions and optimise outcomes. This falls into the International Classification of Functioning, Disability, and Health (ICF) developed by the World Health Organization.[3-5]

Several impairments in body functions and structure, such as dyspnoea, fatigue, cough, muscle weakness and myalgias have been reported in the acute phase, across levels of COVID-19 severity.[6] Such impairments lead to limitations in activities (e.g., walking, moving around, lifting and carrying objects) and restrictions in participation (e.g., engaging in recreation and leisure activities, carrying out the daily routine and in employment) of daily life. This means functional status in patients with COVID-19 is decreased. The health condition itself and contextual factors, i.e., personal (e.g., age and emotional status) and/or environmental (e.g., indoor and outdoor air quality and climate), may act as barriers or facilitators.

Functional status is an individual's ability to perform normal daily activities required to meet basic needs, fulfill usual roles, and maintain health and well-being.[7] Measures of functional capacity (maximum capacity of a person to perform a daily life activity, e.g., the six minute walking distance test (6MWT) or 1-minute sit to stand test (STS) and/or of functional performance (activities people actually do during the course of their daily lives, e.g., Barthel Index or Functional Independence Measure) are used in the literature to assess functional status as they assess different but complementary aspects.[7,8] Decreased functional status includes struggling to perform basic activities (e.g., showering, getting dressed, housework and climbing stairs), and/or work and/or leisure activities.[9]

Preliminary evidence shows that more than 70% of individuals with COVID-19 present functional status impairment at hospital admission and approximately 30% are still impaired at discharge.[10,11] Functional status impairment has been corroborated in two recent systematic literature reviews.[1,8] The exact prevalence of this impairment in patients with COVID-19 and its evolution over time is still unknown. Three main reasons contribute to this lack of

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knowledge. Assessment of these patients continues to be focused on pulmonary/physiological measures and level of functional status is often not established. The largest proportion of individuals had "mild-to-moderate" disease,[12] recovered isolated at home or in institutions and functional status was rarely part of their assessment. When functional status is assessed, various measurement tools are used across different levels of disease severity and timings, which limits comparisons across studies.[1,8] Nevertheless, the persistent impairments over time, across disease severity, already reported in the literature [13-17] also impact on functional status,[18] forming a downward spiral of activity avoidance, and affecting a large proportion of the population with COVID-19. Moreover, decreased functional status has been associated with worse prognosis in patients with COVID-19 [19] hence, it does not just affect individuals, but also increases reliance on informal caregivers [20] and healthcare systems.

Therefore, functional status impairment leads to huge individual and societal burden and should not be considered as a marginal consequence of the pandemic. In fact, it should be classified as a treatable trait as it is highly meaningful/clinically relevant, easily identified and measured, and can be treated/modified.[21] Its integration into the pandemic patient-centered assessment and management should be seen as a priority and not omitted from treatment options, especially non-pharmacological ones (e.g., physical activity, physiotherapy, pulmonary rehabilitation); so the most suitable person-centred intervention is offered to the most appropriate patient in the most appropriate setting. This means that the unmet needs for rehabilitation are currently aggravated and a one-size-fits all approach to address functional status will be of very limited use given the wide range of impairments, limitations and restrictions across COVID-19 severities and even within the same severity. Therefore, the need to improve access to different rehabilitation interventions across healthcare sectors has never been so evident.

Simonelli and coworkers[1] reviewed the measures used to assess physical performance in patients with COVID-19. They included 33 studies and found 28 different measures being used although, the Barthel index (42.4% of studies), the 6MWT (36.4%), the short physical performance battery (21.2%) and the 1-minute STS (12.1%) were the most frequently reported. They corroborated the short- and long-term functional status impairment in this population.[11,14] The low/fair quality of the research in this field and the different aspects of functional status assessed by the measures found were also highlighted.

The authors are to be commended for calling attention to a highly meaningful and yet neglected domain for individuals, informal caregivers and overall society in the COVID-19 era. Results of their systematic review provide some guidance on assessing functional status in this population and may contribute to design and implement rehabilitation interventions to specifically address this domain in those in need.

High quality research and clinical attention to the assessment and rehabilitation of functional status and improved communication and navigability across healthcare sectors (primary, secondary, tertiary) are urgently needed, independently of the disease severity or healthcare setting, if we want to promote autonomy and maximum functioning of this population.

Declaration of competing interest

The authors have no conflict of interest to declare.

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