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## The COVID-19 Pandemic Confronts the Motivation Fallacy within Pulmonary Rehabilitation Programs

Manuela Karloh<sup>a,b,c</sup> , Thiago Sousa Matias<sup>d,e</sup> , and Anamaria Fleig Mayer<sup>a,c,f,g</sup> 

<sup>a</sup>Center for Assistance, Teaching and Research in Pulmonary Rehabilitation, Santa Catarina State University (UDESC), Florianópolis, Santa Catarina, Brazil; <sup>b</sup>Department of Physiotherapy, Estácio University Center, São José, Santa Catarina, Brazil; <sup>c</sup>Department of Physiotherapy, Center for Health Sciences and Sport, Santa Catarina State University (UDESC), Florianópolis, Santa Catarina, Brazil; <sup>d</sup>Research Center for Physical Activity and Health, Research Center for Motivation and Human Movement, School of Sports at Federal University of Santa Catarina (UFSC), Florianópolis, Santa Catarina, Brazil; <sup>e</sup>Graduate Program in Physical Education, Federal University of Santa Catarina (UFSC), Florianópolis, Santa Catarina, Brazil; <sup>f</sup>Graduate Program in Physiotherapy, Santa Catarina State University (UDESC), Florianópolis, Santa Catarina, Brazil; <sup>g</sup>Graduate Program in Human Movement Sciences, Santa Catarina State University (UDESC), Florianópolis, Santa Catarina, Brazil

### ABSTRACT

Social distancing and quarantines have been implemented worldwide to reduce the spread of Coronavirus Disease (COVID-19). However, social distancing has had far-reaching health consequences, considering that the COVID-19 pandemic has exposed people to the hazard of physical inactivity and sedentary behavior. For patients with Chronic Obstructive Pulmonary Disease (COPD), which is one of the main diseases at risk for COVID-19, the impact is even greater since outpatient pulmonary rehabilitation (PR) programs are temporarily closed. More than ever, patients' behavior change to exercise calls for urgent debate. We propose a theoretical discussion in light of Self-Determination Theory, aiming to make PR a setting that supports autonomous forms of motivation. The scenario will not be changed in the short-term; but if other conditions hinder the development of PR in its most traditional form, the PR community will be better prepared to overcome the barriers to maintain physical exercise.

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COVID-19; pulmonary rehabilitation; Pulmonary Disease; Chronic Obstructive; motivation

The outbreak of Coronavirus Disease (COVID-19) has attracted worldwide attention and official control measures, such as social distancing and quarantines, have been implemented to reduce the spread of the disease [1]. However, social distancing has had far-reaching health consequences, considering that the COVID-19 pandemic has exposed people to the hazard of physical inactivity and sedentary behavior due to stay-at-home guidance [2]. Thus, systematic exercise interventions must be given high priority when strategies to mitigate long-term detrimental impacts of COVID-19 and social distancing are planned [3].

Chronic Obstructive Pulmonary Disease (COPD) is a common comorbidity described in patients with COVID-19 [4,5] and it has been shown to be one of the greatest risk factors for the development of severe adverse outcomes, such as admission to intensive care unit, invasive ventilation or death [4]. Accordingly, three overlapping issues can be highlighted: (1) pulmonary rehabilitation (PR) programs are temporarily closed; (2) the negative impact of inactivity on the prognosis of patients with COPD is widely known; and (3) social distancing has a tremendous impact on mental health, generating anxiety and emotional distress.

In this sense, physiotherapists should endeavor to keep COPD patients physically active. A question should be

raised: Are COPD patients engaged in regular exercise at home following PR protocol recommendations? Based on the current literature regarding traditional outpatient PR [6–9], we can easily presume that the answer is no.

Since the 2013 American Thoracic Society/European Respiratory Society Statement on Pulmonary Rehabilitation, behavioral change has been one of the major goals of PR [10]. But, in practice, what have we done in the past seven years? What is happening to PR patients in times of the COVID-19 pandemic if they are socially isolated and we have not been able to promote behavior changes to make them incorporate exercise beyond the boundaries of our outpatient's programs?

So far, a small number of studies have addressed the motivational issue within PR [6–9, 11]. Our preliminary data showed that traditional PR following international guidelines does not promote enough motivational changes to ensure maintenance of exercise behavior. Moreover, our patients were not likely to continue exercising even with a slight increase in self-determination after PR because they were amotivated and/or externally regulated [7].

Recently, home-based and telehealth-PR programs have been suggested as alternatives to improve access and increase capacity of traditional outpatient PR. Although

these programs improve traditional outcomes, such as quality of life [12, 13], dyspnea [12] and rates of hospitalization in COPD [13], there has been no evidence of a positive impact on behavioral outcomes.

More than ever, COPD patients' behavior change to exercise calls for urgent debate. In the current context of COVID-19, COPD patients are discouraged to perform outdoor walking and exercise in public places, such as parks, playgrounds, streets and walking trails, which have been described as effective in increasing long-term physical activity [11]. So, performing the training protocol at home is a safer option. In fact, COPD patients had probably been advised to do so [14]; but in practice, they must contend with all the underlying complexities, specificities and unpredictable situations. When COPD patients shift from a well-designed, structured, organized and safe intervention program to an independent home-based exercise scenario, they are confronted with the need to exercise under conditions they were not prepared for, including environmental factors, distress, frustration and stress [15].

Exercise participation during PR does not guarantee maintenance of physical activity [16, 17]. From a motivational perspective, it is observed that PR involves mostly controlled forms of motivational regulations and the goals are mainly set to attain disease-related outcomes [18]. The main efforts are aimed at teaching exercises in a constrained environment, rather than at fostering a more self-driven approach that could be extended or modified, for instance, at home during social distancing.

PR protocols delivered according to an international standardized framework [10] are not intentionally developed to promote motivation enhancement [19]. This is crucial to change behavior into more autonomous forms despite the scenario (outpatient, home-based or tele-health). The "one-size-fits-all" approach for PR does not seem to work for all the patients [19], at least, not in terms of motivation enhancement and behavior change. The intervention might be customized according to the patient's motivational profile [19], social support, cultural practices and environmental determinants [11].

PR is likely to increase autonomous motivations by supporting individuals' basic psychological needs: autonomy, competence and relatedness. This is an environment where people have feelings of empowerment and choice and understand the internal value of physical activity. It is also a setting where people feel effective and capable rather than undermined or controlled by external directives or pressures. As a consequence, a sense of belonging and connectedness will emerge [20].

In short, motivational intervention within PR is still rare. However, recent meta-analyses of motivational interventions [21, 22] beyond the boundaries of PR have provided a set of techniques to improve motivation and promote behavior change that can be prompted into PR settings. Simple ideas can be implemented in PR, namely providing personal choices to allow a more in-depth exploration of the behavior; creating an open and collaborative relation in which patients' concerns regarding their goals are acknowledged

and valued; and providing a realistic structure that is able to deliver meaningful challenges. These interventions showed to be effective in fostering changes, such as increase in intention and stage of change for physical activity; which in turn were related to behavioral experience, self-regulation and changes in physical activity behavior [21], enhancement of autonomous motivation, perception of autonomy support, and satisfaction of autonomy and competence [22].

Although our focus in this discussion has mainly been limited to Self-Determination Theory [23, 24], other theoretical frameworks, such as the Theory of Planned Behavior, may also offer empirical basis to enhance motivation within PR interventions [6, 9]. Although there is no evidence about the best strategy to change patients' behavior, there is a consensus that the intervention has to be meaningful for them [25, 26]. Considering the extrinsic locus of causality for PR, the patients' low autonomy for exercise and disease severity, it might be hard for patients to identify internal reasons to maintain an active lifestyle in times of social distancing without specific and planned psychological strategies.

We do not want to face a pandemic like this ever again, but it seems necessary to change this paradigm in PR. Ultimately, if other conditions hinder the development of PR in its most traditional form, the PR community will be better prepared to overcome the barriers to maintain physical exercise. The fallacy will turn into actions; this is our major goal.

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No potential conflict of interest was reported by the author(s).

## ORCID

Manuela Karloh  <http://orcid.org/0000-0003-2082-2194>

Thiago Sousa Matias  <http://orcid.org/0000-0003-0241-3776>

Anamaria Fleig Mayer  <http://orcid.org/0000-0003-0320-4810>

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