Journal of Statistics on Health Decision

5th Statistics on Health Decision Making: Personalized Medicine

June 1-2, 2023 | University of Aveiro

CONFERENCE ABTRACTS

* Corresponding author

* Corresponding author

P21
Low versus High-resource Pulmonary Rehabilitation Settings in COPD: A Retrospective, Propensity Score-Matched, Non-Inferiority Study

Joana Antão[1,2,3,4,5], Cátia Paixão[1,2,3], Patrícia Rebelo[1,2,3], Ana Machado[1,2,3,6,7], Sara Souto-Miranda[1,2,3,4,5,8], Ana Sofia Grave[1,2], Cíntia Dias[1,2], Guilherme Rodrigues[1,2], Tânia Pinho[1,2], M. Aurora Mendes[1,2,3,9], Ana Oliveira[1,2,10,11], Alda Marques[1,2]

[1] Respiratory Research and Rehabilitation Laboratory (Lab3R), School of Health Sciences (ESSUA), University of Aveiro, Aveiro, Portugal.
[2] Institute of Biomedicine (iBiMED), University of Aveiro, Aveiro, Portugal
[3] Department of Medical Sciences, University of Aveiro, Aveiro, Portugal
[4] Department of Research and Development, Ciro, Horn, The Netherlands
[5] Department of Respiratory Medicine, Maastricht University Medical Centre, NUTRIM School of Nutrition and Translational Research in Metabolism, Faculty of Health, Medicine and Life Sciences, Maastricht University, Maastricht, The Netherlands
[6] Rehabilitation Research Center (REVAL), Faculty of Rehabilitation Sciences, Hasselt University, Diepenbeek, Belgium
[7] Biomedical Research Institute (BIOMED), Hasselt University, Diepenbeek, Belgium
[8] Portuguese Order of Physiotherapists, Lisbon, Portugal
[9] Pulmonology Department, Centro Hospitalar do Baixo Vouga, Aveiro, Portugal
[10] School of Rehabilitation Science, McMaster University, Hamilton, Ontario, Canada
[11] West Park Healthcare Centre, Respiratory Medicine, Toronto, Ontario, Canada

Keywords: COPD; Pulmonary Rehabilitation

Background: Pulmonary rehabilitation (PR) is crucial for the management of people with chronic obstructive pulmonary disease (COPD) with well-established physical, psychological and social benefits. Access to PR is, however, limited. Implementing PR with minimal resources is being considered to increase its availability. Nonetheless, the effectiveness of this approach is unclear. This study aimed to assess whether PR for COPD in low-resource was non-inferior to high-resource settings.

Methods: A retrospective study with people with COPD who participated in PR programs was conducted. Programs delivered at the Respiratory Research and Rehabilitation Laboratory, School of Health Sciences of the University of Aveiro (Lab3R-ESSUA) or at hospital outpatient departments were classified as high-resource settings. PR programs conducted at city council facilities or primary healthcare centres were deemed low-resource settings. Outcomes of interest were change in functional exercise capacity assessed with the 6-minute walk test (6MWT), disease impact with the COPD assessment test (CAT) and health-related quality of life with the St. George Respiratory Questionnaire (SGRQ). The minimal clinically important differences for 6MWT ($\geq$ 25m), CAT ($\leq$ -2units) and SGRQ ($\leq$ -4 points) were defined as the non-inferiority margins. Samples were matched using logistic regression-based propensity-score adjusted for sex, age, body mass index, lung function, smoking status, dyspnoea severity, and baseline values for all outcomes at a 1:1 ratio with nearest neighbour matching and a caliper of 0.2. Covariate balance was assessed using standardized mean differences (SMD). Settings were compared using chi-square test, Fisher's exact test, independent t-test, or Mann–Whitney U test, as appropriate. A two-sided 95% confidence interval (CI) between-group differences was constructed to evaluate non-inferiority. Statistical analyses were performed in R software.

Results: A total of 150 people with COPD completed PR. After matching, 102 people were included in the analysis, 51 in each setting. No significant differences were found in baseline characteristics (P>0.05) and all SMDs were less than 0.1, indicating good covariate balance. No significant differences were observed between settings in pre-post change for any of the outcomes (P>0.05). Non-inferiority of the low-resource settings compared with the high-resource settings was demonstrated only for the 6MWT [mean difference between low and high-resource settings (95%CI), 6.6 (-19.73; 32.93)], being inconclusive for CAT and SGRQ.

Conclusion: PR with minimal resources seems to be non-inferior to high-resource PR in terms of functional exercise capacity in COPD. Other matching methods are being explored to minimise sample size loss and strengthen our results.

P22
Evolution of the risk perception of infection by COVID-19 – Evidence from the COVID-19 Barometer: Social Opinion

Inês Paixão[1,2], Marília Antunes[1,2], Patrícia Soares[3,4]

[1] DEIO, Faculdade de Ciências, Universidade de Lisboa, 1749-016 Lisboa, Portugal
[2] CEAUL, Centro de Estatística e Aplicações, Faculdade de Ciências, Universidade de Lisboa, 1749-016 Lisboa, Portugal
[3] Instituto Nacional de Saúde Doutor Ricardo Jorge, Av. Padre Cruz, 1600-609 Lisboa, Portugal
[4] Escola Nacional de Saúde Pública, Centro de Investigação em Saúde Pública, Comprehensive Health Research Center, Universidade NOVA de Lisboa, Lisboa, Portugal

Keywords: COVID-19, coronavirus, longitudinal study, pandemic, risk perception, survey

Since the beginning of the COVID-19 pandemic, several non-pharmaceutical interventions (NPI) have been adopted worldwide in an attempt to keep the growing transmission of the virus under control. Several factors might influence the effectiveness of NPI. This study aimed to evaluate the evolution of the perception of the risk of infection by COVID-19 in Portugal between March 2020 and March 2022, and to identify associated factors. We used the "Covid-19 Barometer: Social Opinion" barometer, which was launched at the beginning of the pandemic in Portugal to identify and monitor the evolution of the Portuguese population's perception of the pandemic and its impact on daily life and was online during two years. We also considered COVID-19 incidence, stringency data, COVID-19 variants' prevalence and Google searches on COVID-19.The outcome considered was the perceived risk of infection by COVID-19, which was classified into low versus high/moderate. The explanatory variables from the Barometer were grouped into dimensions: general factors (socio-demographic and health-related variables), adherence to protection measures, vaccine hesitancy and coping mechanisms.Considering the nature of this study and the outcome variable, generalized linear models were used to study the temporal evolution of the considered variables – in particular, mixed effects logistic regressions. One model was fit per group of variables/dimension. Preliminary results show that, linked to a higher risk perception are lower levels of education, poor health status and working full-time at the workplace (as opposed to remote working) – the last two with a growing tendency over time. On the other hand, individuals with a previous COVID-19 diagnosis and a better mental health status are more likely to perceive lower risks, a propensity that diminishes over time. Students and unemployed individuals are also more likely to have a lower perception of risk, when compared to employed individuals of the same age and sex. Additionally, there is in general a higher probability of perceiving a lower risk of infection as time progresses.

Ackowledgments: This work is partially financed by national funds through FCT – Fundação para a Ciência e a Tecnologia under the project UIDB/00006/2020.