



Observational Study

A survey on the impact of the coronavirus disease 2019 pandemic in Portuguese physical and rehabilitation medicine departments

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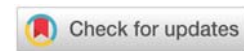
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Abstract

Introduction: The pandemic Coronavirus Disease 2019 (COVID-19) strongly affected the organization and functioning of Physical and Rehabilitation Medicine (PRM) departments in Europe, posing specific challenges in the management of diseases and their consequences.

We aim to evaluate the changes suffered by Portuguese PRM departments in the scope of assistance, organization, training and research.

Methods: A self-administered, cross-sectional online questionnaire was sent to 41 Portuguese PRM departments, regarding the assistance provided to patients with COVID-19, organizational changes and difficulties experienced on team management, training and research.

Results: The survey had a response rate of 82.9%. The majority of the PRM departments assisted patients with COVID-19, mainly in the context of inpatient general ward care and intensive care units. Changes in the assistance activity and accessibility were reported by almost all PRM departments, mainly affecting the outpatient consultation. There was a reduction on the number of healthcare professionals reported, especially by transfer to other areas, and almost all used remote procedures, especially for patient reassessment, counseling, and monitoring. The majority of PRM departments highlighted the pandemic's impact on the training availability, as well as in the applied research and publications.

Conclusions: The pandemic triggered a complete overhaul of rehabilitation departments with significant changes in assistance activity, changing routines and programmed procedures, with a strong negative impact on scientific research and training. Outpatient consultations was the most affected area, while support for hospitalization and internal consultations remained mostly operational. The use of remote procedures was high, particularly in follow-up and counseling.

Abbreviations

COVID-19: Coronavirus Disease 2019; PRM: Physical and Rehabilitation Medicine

Introduction

The outbreak of Coronavirus Disease 2019 (COVID-19), caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection, spread rapidly across the world

[1], deeply changing our lives and presenting a high risk of morbidity and mortality.

The COVID-19 pandemic has suddenly conditioned the activity of the Portuguese National Health Service (NHS), posing specific challenges in the management of diseases, both acute and chronic, as well their consequences.

Both biomedical and biopsychosocial models were faced with organizational weaknesses, limited resources and the absence of adequate coping mechanisms that, in rehabilitation medicine, suggest a strong impact on functionality and quality of life.

This pandemic affects mainly elderly populations, individuals with multimorbidity individuals with disabilities, poor people and ethnic minorities [2,3].

Physical and Rehabilitation Medicine (PRM) departments are strongly affected in their organization and functioning, making medical care for outpatients and inpatients difficult, as well as training and research activities [4].

The objective of this study was to evaluate the changes suffered by Portuguese PRM departments due to the COVID-19 pandemic in the scope of assistance, organization, training and research.

Materials and Method

We describe a self-administered cross-sectional survey. Data were collected from November 6th to 16th, 2020. The questionnaire contained 13 questions, referring to assistance, organization, training and research.

The questionnaire was built according to the knowledge and experience of the authors, considering the positions they represent in the Portuguese PRM community.

The questionnaire was done in Google Forms and was distributed by email on November 6th, 2020. It was sent to 41 PRM departments operating in the most representative NHS hospitals, according to the existing registry in the Portuguese PRM Society.

An email reminder was sent on November 12th to increase participation. All responses were anonymous, and no ethical approval was required for this survey, considering the content.

The questionnaire was composed of three sections: 1) questions 1 to 4, regarding the assistance provided to patients with SARS-CoV-2 infection by the PMR departments, 2) questions 5 to 9, regarding the organizational changes that were carried out in the PMR departments due to the COVID-19 pandemic, 3) questions 10 to 17, about the difficulties and limitations experienced during the COVID-19 pandemic on the team management, training and research.

The first questions of the first and second sections defined whether the responder would have to answer the remaining questions of that section or not, depending on whether that answer was affirmative or negative, respectively.

Given the nature of the data collected in this study, only descriptive statistics were used to summarize the data.

Results

Of the 41 PRM departments operating in NHS hospitals, 34 participated in the survey, which represents a response rate of 82.9%. The majority of the PRM departments (n=25, 73.5%) provided assistance to patients with SARS-CoV-2 infection; almost all of them provided assistance in general wards (n=19, 92.0%) and, also the majority of departments, on Intensive Care Units (n=19, 76.0%) and outpatient consultation (n=14, 56.0%); one department also provided assistance in home visit (Table 1). The overwhelming majority of departments assisted patients with severe and moderate infection, but some also assisted patients with mild infection, and even asymptomatic infection. Regarding the healthcare professionals, almost all PMR departments provided medical assistance, mainly with PMR specialists (n=23, 92.0%), but also with PMR residents (n=13, 52.0%); most departments also provided assistance with physiotherapists (n=22, 88.0%) and speech therapists (n=14, 56.0%).

All the PMR departments reported organizational changes due to the COVID-19 pandemic. The length of the period when the COVID-19 pandemic had the most impact was variable between the departments (Figure 1), approximately half of them reporting a length of over 20 weeks (n=16, 47.1%), although many referred to a period of 5 to 9 weeks (n=13, 38.2%). The changes (Table 2) were related to the assistance activity in almost all the departments (n=33, 97.1%), and the overwhelming majority also reported changes regarding

Table 1: PMR departments that provided assistance to patients with SARS-CoV-2 infection (n=25).

	n	%
<i>Locations where the clinical assistance took place</i>		
Intensive Care Unit	19	76.0
General ward	23	92.0
Outpatient consultation	14	56.0
Home visit	1	4.0
Other	4	16.0
<i>Severity of the infection</i>		
Severe	22	88.0
Moderate	21	84.0
Mild	3	12.0
Asymptomatic	4	16.0
<i>Healthcare professionals who provided care</i>		
PMR specialists	23	92.0
PMR residents	13	52.0
Physiotherapists	22	88.0
Speech therapists	14	56.0
Occupational Therapist	9	36.0
Nurses	6	24.0

Abbreviations: PRM: Physical and Rehabilitation Medicine

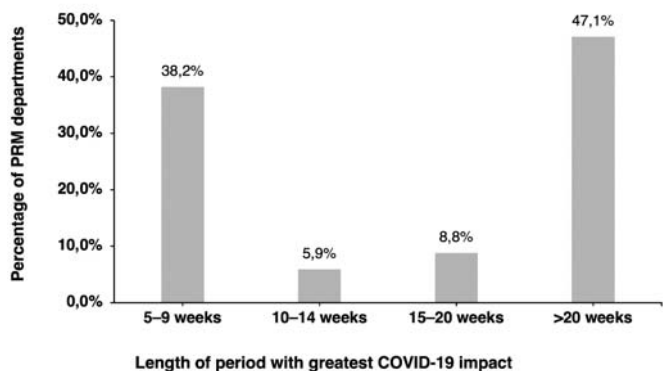


Figure 1: Length of the period when the COVID-19 pandemic had the greatest impact.

to be a major threat to healthcare systems across Europe [6]. The impact on healthcare systems is overwhelming, which understandably includes PRM departments throughout Europe, and Portugal is no exception. Most of the Portuguese PRM departments included in this study received patients infected

practices and routines (n=31, 91.2%), as well as accessibility (n=31, 91.2%). The functional areas that had the most changes with the COVID-19 pandemic were the outpatient consultation (that suffered changes in all of the PRM departments), the technical sectors (n=31, 91.2%), and the training and research (n=18, 52.9%). Almost all of the PRM departments (n=32, 94.1%) reported difficulties in accessibility, not only to the department (n= 25, 78.1%), but also to the technical sectors (n=22, 68.8%) and even to the Hospital or Rehabilitation Center (n=17, 53.1%).

Regarding the team management, the overwhelming majority of PRM departments reported difficulties on the application of the rehabilitation program (n=29, 85.3%) and on the reduced number of healthcare professionals (n=23, 67.6%). On the other hand, difficulties on the monitoring of the rehabilitation program (n=16, 47.1%), the decision-making process (n=11, 32.4%) and the communication between professionals (n=9, 26.5%) were reported by fewer departments (Table 2).

A total of 22 PRM departments suffered difficulties in resource reallocation due to the COVID-19 pandemic. Most of those departments had their professionals (n=17, 77.3%) and/or physical space (n=14, 63.6%) re-allocated to perform other tasks.

Almost all of the PRM departments reported the use of remote procedures during the pandemic, especially for patient reassessment (n=29, 90.6%), counseling (n=27, 84.4%) and monitoring of the rehabilitation program (n=21, 65.6%); fewer departments used remote procedures on the decision-making process (n=10, 31.3%).

The majority of PRM departments (n=28, 82.4%) highlighted the pandemic's impact on scientific research and training, especially on training availability (n=24, 85.7%). A reduction in training capacity was identified by most PRM departments (n=24, 85.7%), and a substantial impact on applied research (n=13, 46.4%) and publications (n=10, 35.7%) was also identified.

Discussion

The need for intervention guided by rehabilitation medicine has steadily increased [5]. The COVID-19 pandemic is proving

Table 2: Changes in PMR departments due to the COVID-19 pandemic (n=34).

	n	%
<i>Changes reported</i>		
Care activities	33	97.1
Practices and routines	31	91.2
Accessibility to department	31	91.2
Schedules	27	79.4
Number of healthcare professionals	18	52.9
<i>Changes in functional areas</i>		
Outpatient consultations	34	100.0
Non-medical sectors	31	91.2
Research and training	18	52.9
Internal consultations	10	29.4
Inpatient departments	10	29.4
<i>Difficulties / limitations in accessibility</i>		
Any difficulty / limitation	32	94.1
PMR department	25	78.1
Technical sectors	22	68.8
Hospital / Rehabilitation Center	17	53.1
<i>Team management difficulties</i>		
Carrying out rehabilitation program	29	85.3
Reduced number of healthcare professionals	23	67.6
Assessment of the rehabilitation program	16	47.1
Decision making process	11	32.4
Communication between professionals	9	26.5
<i>Resource allocation</i>		
Any change	22	64.7
Professionals	17	77.3
Physical space	14	63.6
Equipment	4	18.2
<i>Use of remote procedures</i>		
Any use	32	94.1
Patient reassessment	29	90.6
Advice	27	84.4
Monitoring of the rehabilitation program	21	65.6
Decision making process (diagnosis and prescription)	10	31.3
<i>Impact on training and research</i>		
Any impact	28	82.4
Reduction of training availability	24	85.7
Reduction/suspension of applied research	13	46.4
Reduction in the number of publications	10	35.7
Reduction/suspension of fundamental research	4	14.3

Abbreviations: COVID-19: Coronavirus Disease 2019; PRM: Physical and Rehabilitation Medicine

with SARS-CoV-2 and were forced to change their priorities and treatment criteria.

Patients infected with SARS-CoV-2 were assisted mostly in the context of inpatient general ward care or intensive care units and had mostly moderate to severe clinical condition, which reflects the need for urgent rehabilitation intervention in their recovery program. Since this is a disease with neurologic and muscle-skeletal sequelae at several levels, there was also a need for a global and multiprofessional rehabilitation program, which involved all healthcare professional groups to different extents [1]. The role of these multiprofessional teams has been fundamental in patient's identification, not only to provide adequate, tailored rehabilitation procedures, but also to prevent loss of functionality [6]. The physiatrist played a crucial role in this team, being the element that showed the highest level of assistance activity. At the same time, treatment priorities for rehabilitation patients and professional/patient protection guidelines have been redefined according to the instabilities generated, which is highlighted by the fact that all PRM departments reported changes to their normal activity due to the COVID-19 pandemic.

As seen in other European countries, the pandemic also triggered a complete overhaul of rehabilitation departments in Portugal. These changes were significant in impacting assistance activity, changing routines and programmed procedures. The vast majority of Portuguese PRM departments reported changes in accessibility, which is consistent with previous studies [7] and highlights the major impact of COVID-19 in the ability of PRM departments of providing care in an adequate timeframe and with adequate resources, to allow patients to achieve their maximum rehabilitation potential. Importantly, half the PRM departments reported changes to have had their greatest impact last more than 20 weeks, which may have potential consequences for longer term quality of care and functional outcomes for both COVID-19 and non-COVID-19 patients.

Across Europe, a large number of healthcare professionals in the field of rehabilitation were transferred to emergency rooms and other COVID-19 diagnostic and treatment facilities. This reality was not particularly prevalent in Portugal, with only approximately 50% of departments reporting changes in the number of healthcare professionals. There were also substantial changes in the activities performed in several PRM departments in Europe (Italy, Spain and France) in order to respond to COVID-19 needs, with rehabilitation facilities being transformed into improvised wards for inpatients. The Portuguese national reality was not vastly different, in fact outpatient consultations was the most affected area, while support for hospitalization and internal consultations remained mostly operational [1,4]. Overall, the changes that took place to address COVID-19 needs compromised not only the physical but also the emotional well-being of healthcare professionals exposed to this reality, which may have a long-term impact on the psychological well-being of healthcare professionals.

The use of remote procedures was high, almost unanimous in all PRM departments, particularly in follow-up and counseling.

Given the reduced experience of Portuguese telemedicine in rehabilitation, there are several aspects to investigate, namely the quality of the means available, the effectiveness of the intervention, the level of patient compliance and the validity of the decision-making process (diagnosis and prescription) [1].

Training activity was severely impaired, considering the restrictions on differentiated consultations, accessibility to departments and the change in the focus of activity.

The negative impact on scientific research and training was particularly strong, limiting the possibilities of publication particularly in clinical rehabilitation but also in basic science.

Research during the pandemic must be able to adapt to new requirements, always supported by the idea of promoting functionality and quality of life. Based on the literature [8] we enunciate proposals for lines of investigation as opportunities that need to be implemented, in the care needs of patients, both in the acute phase and in the context of chronic disease or sequelae.

Post-intensive care syndrome presents several research opportunities. In the future, it may be necessary to understand how pre-existing morbidities will influence rehabilitation. It is also important to validate therapeutic models, with different specificities depending on the clinical context, particularly in vulnerable groups, elderly, patients with multimorbidity, specific impairments and minorities.

It is important to ensure the necessary resources and proper management of the rehabilitation teams, allowing access for all, COVID-19 and non-COVID-19 patients, avoiding the deterioration of care. It must be understood what the effective need for care is and what resources are needed to promote good functionality.

In the management of rehabilitation teams, it is important to understand multidisciplinary dynamics and to verify the assumptions for medical decision making supported by the best evidence.

Conclusion

The COVID-19 pandemic has changed our lives and puts dramatic pressure on healthcare systems. There was a high impact on the organization and current activity of PRM departments. Rehabilitation care was strongly affected, as well as medical training and research. What are the direct and indirect costs in the loss of functionality of our patients? How will weaknesses in medical training reduce the quality of our professionals? Increased research in rehabilitation medicine can facilitate a better understanding on the topic and promote strategies to mitigate this negative effect.

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