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RESEARCH LETTERS

40 years of history of PhD graduates in Respiratory Medicine in Portugal. Towards professorship or beyond?

To the Editor,

The number of PhD holders is increasing worldwide[1] and according to the Eurostat in 2009, Portugal had 15,300 PhD students (10.4% in health & welfare services), ranking below Czech Republic, Greece, Austria, Spain and UK (with respectively, 24,900, 21,600, 18,500, 77,200, 81,700, all with more than 13% in health & welfare services, except Austria).[2]

Before the recent major redesign of our medical doctoral programmes, the traditional PhD apprenticeship mode was unstructured and was the result of personal contact with a professor. Normally a successful PhD was the route to an academic career.

The number of PhD theses in a discipline was a mirror of how attractive the field was, how organized the setting, how motivated the people concerned and the extent of support of PhD tutors or supervisors.

What is the history of PhD graduates among pulmonologists in Portugal?

In the last 40 years, we have had 23 PhD theses in Portugal in the discipline of Respiratory Medicine by pulmonologists (Fig. 1), beginning in 1976 in Lisbon University.[3] Of course the first PhD thesis in pulmonology was back in 1955 by Thomé Villar. If we look at the last 40 years, only in 1989 and 2015 was there more than 1 PhD thesis presented per University (3 PhD graduates in 1989 and 2 in 2015 at Coimbra University). There was an approximate mean of one thesis every other year, with two longer periods of relative stagnation (between 1976 and 1983 and between 2003 and 2009) without any theses. In the last 2 years we have had the highest output ever with 5 PhD being presented: in Porto University one, Coimbra University three and in Lisbon University one. Porto University has had the highest and most constant output with 9 theses in 32 years. The topics of all theses focused mainly on the areas of occupational disorders (eight theses), different aspects of lung function (four), Asthma (three), Sleep (two), Tuberculosis (two) and Lung Cancer (two). From the year 2000 onwards the number of first author articles per thesis published in peer-reviewed journals was 2.2 (with some theses with no article published and some with 6). Following the retirement of 7 Professors, currently we have 1 Full Professor, 5 Associate Professors and 6 Assistant Professors.

What is the picture of academic positions in respiratory medicine in Europe?

According to the 2013 ERS White Book,[4] the number of adult respiratory medicine professors was higher in France (with around 90), followed by the UK (around 70) and Italy (around 55). Portugal stands in 15th position (with around 12).

The presence of academics as heads of respiratory medicine departments is a powerful means for strengthening medical research and implementing the best clinical practice.

What will the future bring?

Currently there are 19 PhD students in Respiratory Medicine, 7 from the Faculty of Medicine of Porto University, 2 from the Faculty of Medicine of Coimbra University, 5 from the Faculty of Medicine of Lisbon University, 4 from the Faculty of Medical Sciences of Lisbon Nova University and 1 from the Faculty of Health Sciences of University of Beira Interior.

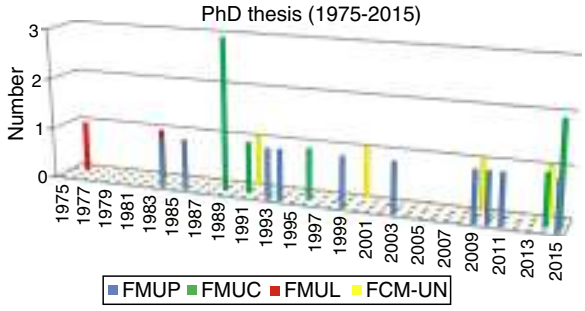

Figure 1 FMUP, Faculty of Medicine of Porto University; FMUC, Faculty of Medicine of Coimbra University; FMUL, Faculty of medicine of Lisbon University; FCM-UN, Faculty of Medical Sciences of Lisbon Nova University.

Due to the new Bologna process, the requirement to publish peer-reviewed articles prior to defending a doctoral thesis is becoming increasingly popular in Portugal, ranging from advisable to mandatory in some universities. In fact, in the Faculty of Medicine of Porto University the doctoral candidate must have a minimum of 2 articles as first author in peer-reviewed journals with impact factor. The Standards for PhD Education in Biomedicine and Health Sciences in Europe,[5] even recommend that the minimum requirement for the PhD thesis in medicine and health sciences should be the equivalent of at least three ''in extenso'' papers published in internationally recognized journals.

In addition the quality of the thesis will be judged by the impact factor of the journals. Again in the Faculty of Medicine of Porto University to be approved ''with honours'' the PhD candidate must have one of the following: (1) one article published as first author, in a journal within the percentile 90 from ISIS ranked list in its area; (2) two articles published as first author, in a journal within the percentile 70 from ISIS ranked list in its area; (3) four articles published as first author, in journals with an average ranking within the percentile 40 from ISIS ranked list in its area.

So it seems that the trends for PhD doctorates will rise significantly in the coming years and with them good quality publications will be emerging from such a high number of PhD thesis.

What else can we do to enhance our PhD programmes?

Mobility and collaborations between universities and research organizations, at all stages of the PhD career should be encouraged. Receiving training in biomedical engineering, molecular biology, chemistry and business & management in the more qualified centres would create a better skilled researcher. New funding strategies should be explored to increase our record in science and innovation. Centralized leadership could serve as a hub for global excellence to increase our share in global respiratory research.

In conclusion, if the new requirements for PhD theses are widespread among Portuguese respiratory medicine academia we can expect in the future an advance in the quality and quantity of research. Although the expected rise in doctorates will bring an increase in academic research will all of these respiratory medicine specialists with a PhD degree reach the long way to professorship? Or will they turn their talents outside the academia?

Conflicts of interest

The authors have no conflicts of interest to declare.

References

1. Cyranoski D, Gilbert N, Ledford H, Nayar A, Yahia M. The PhD factory. Nature. 2011;472:276–9.
2. Europe in figures – Eurostat yearbook; 2012. p. 574–603.
3. Ramiro Ávila- Estudo das Granulomatoses Pulmonares de Causa Inalatória. FMUL 1976.
4. http://www.erswhitebook.org/chapters/medical-respiratory-specialists/.
5. Standards for PhD Education in Biomedicine and Health Sciences in Europe. A proposal from ORPHEUS–AMSE–WFME. Denmark: Aarhus University Press; 2012.

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Is there relationship between dynamic volumes of pulmonary function and cardiac workload (maximal oxygen uptake) in young athletes?

Dear Editor,

In many obstructive airway diseases, the abnormal pulmonary function, with impaired distribution of ventilation and consecutive gas exchange disturbance, limits aerobic working capacity and maximal oxygen consumption (VO2max).[1] With regard to pulmonary function and VO2max importance in athletic performance,[2] as well as to the close relationship between these two variables, we here report on the causality between dynamic volumes of pulmonary function and maximal oxygen uptake, measured in young elite athletes and their age- and psychometric-matched controls. The study included 45 Caucasian men, all nonsmokers with no history of cardiovascular and respiratory diseases, equally divided into three groups: group A (15 elite aerobic football players (23.7 ± 4.4 years)), group B (15 elite anaerobic karate players (23.8 ± 3.5 years)), group C (15 sedentary controls (23.8 ± 1.7 years)). The research protocol was approved by the local ethical committee and complied with the guidelines of the Declaration of Helsinki.

All participants gave informed written consent before their inclusion. Each subject underwent two protocol measurements: an incremental exercise test on treadmill for VO2max measurement and spirometry tests for the measurement of the pulmonary function: vital capacity – VC, forced vital capacity – FVC, forced expiratory volume in the first second – FEV1 (all presented in percent predicted and as measured values both in liters and percentages); Peak Expiratory Flow – PEF (shown in liters per second) and FEV1/FVC (as percentage). Spirometry was performed using standard spirometer (Turnaic, Pneumotach) Pony FX (Cosmed Pulmonary Function Equipment, Italy). Bruce treadmill protocol (T200; COSMED Ltd, Rome, Italy with Jaeger, Oxycon pro, Wurzburg, Germany) was the standard exercise protocol for this study.[3] The duration of the test, measured in seconds and limited by the subject's heart rate, was 12.81 (1.19),