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Scientific production of Vice Chancellors for Research in Peruvian universities with a medical school

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Abstract

OBJECTIVES
To determine the scientific production of Research Vice-chancellors at Peruvian universities that have medical schools, as well as their academic degrees as an indirect way to evaluate their suitability for the position they hold.

METHODS
We searched all Peruvian universities that register medical schools. Of these, the scientific production of the universities registered in SCOPUS was identified in September of the 2016. The scientific production of the vice chancellors of investigation of these faculties of medicine was determined through the search of its scientific publications registered in SCOPUS and those reported in the National Registry of Researchers in Science and Technology. Academic degrees were obtained from the database of the National Superintendence of Higher University Education.

RESULTS
The sample included 28 research vice chancellors. Only 4/28 had any publications. The average number of articles published by the vice chancellors of research was 1.71, the number of citations 23.1 on average and the H index 0.64. Besides, 22 Vice-chancellors of research had the degree of doctor, four had the degree of bachelor and two the degree of master.

CONCLUSIONS
The scientific production of research vice chancellors is poor. The required academic grade requirement for the position is not met in all cases. It is likely that, having no research experience, his leadership in directing a university's research policies may be questioned.

Introduction

Scientific research is closely related to the social and economic development of a country or region [1],[2]. In medicine, research training should be a fundamental part of medical education [3], as its incentive translates into evidence for designating resources in cost-effective interventions for the benefit of public health [4].

Knowledge generation through research aimed to transform their milieu is the primary role of universities [1],[2],[5]. Under Section 65 of the new University Act, Vice Chancellors for Research are tasked with directing and executing the general research policy at their universities [6]. They shall also supervise research activities in order to ensure their quality and consistency with the mission and goals set by the university regulations. Under the same Act, the requirements for their position are the same as those for Chancellors and include experience as senior lecturer for no less than five years and holding a doctor's degree [6]. These functions and requirements are not contingent upon university resources [6].

Peru is a developing country in which the scientific output is limited, however the biomedical sector records the highest scientific output levels [7],[8]. The question has been posed whether the regulatory institutions of the general medical career encourage research [9],[10],[11] and whether the highest authorities of a medical school, such as deans, are capable of directing research policies given that, in Peru, their scientific output is scarce [12]. In this sense, the new University Act establishes that Vice Chancellors for Research are tasked with research policy and promotion at Peruvian universities, hence their positions should be filled by those whose academic qualifications and research experience enable them to perform adequately in their assigned role.

The suitability of an authority to hold office in some respects is subjective. However, since they are tasked with directing a university's research policies. Vice Chancellors for Research are expected to have prior research experience quantifiable through papers published in indexed journals [5]. This may be an indirect way of assessing their suitability for the position, as it has been suggested that the scientific output of a research authority is the cornerstone of the academic success of an institution [13].

We understand that the scientific output of Vice Chancellors for Research at universities has not been surveyed thus far. Hence the objective of the present study is to establish their scientific output production at Peruvian universities with a medical school, featured in indexed journals in order to indirectly determine whether they are qualified for the position to which they were appointed.

Methods

This research work is a descriptive and cross-sectional correlational study with intentional non-probabilistic sampling. We searched the SCOPUS database for Peruvian institutions in September 2016. The SCOPUS database indexes over 21,500 journals from different areas of human knowledge, including a large number of biomedical journals. The journal selection process used is rigorous, and at the time of our search (September 2016) SCOPUS was regularly used by the National Registry of Science and Technology Researchers and the National Science and Technology Council.

Peruvian institutions were searched in the aforementioned database for the described period, which represented the universe of our study. After selection, universities identified with a medical school were chosen, which constituted the population of our study. Only universities with a medical school were chosen, as the largest number of papers in Peru are published in the biomedical field. Subsequently, the website of every university listed was used to establish which universities included a Vice Chancellor for Research, which represented the sample of our study. The name of each Vice Chancellor for Research and its scientific output featured on SCOPUS was compared against the records of the National Registry of Science and Technology Researchers and the National Science and Technology Council, as well as double-check using a combination of first and last names.

A descriptive statistical evaluation was carried out by studying the publication of one or more papers in their life, one or more papers over the past five years, one or more papers in the past year, the number of papers published, the number of citations, the h-index and the number of co-authors, by virtue of the information appearing in SCOPUS as of September 2016. There were no limitations on the type of paper recorded.

The academic degrees of Vice Chancellors for Research were obtained from the National Superintendence for Higher Education database.

Results

Our results show that a medical degree in taught in 31 universities, three of which were excluded because their organization chart did not include the position of Vice Chancellors for Research. Hence the final analysis population consisted of 28 individuals.

Of the 28 Vice Chancellors for Research evaluated, only those of four universities, including three public universities and one private university (14.2%), had had at least one research report paper published and indexed in SCOPUS (Figure 1). Of these, three (75%) had published a paper over the past five years and only two (50%) had published an article in the past year.

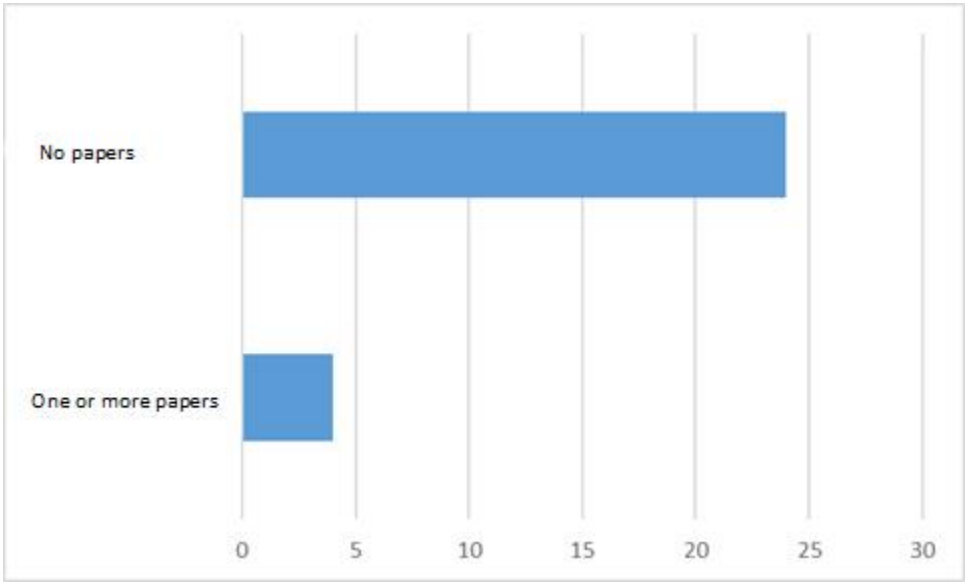

Figure 1. Number of Vice Chancellors for Research with Scientific Papers indexed in SCOPUS

The mean number of papers published was 1.71 (rank 0 to 36); the number of citations was 23.1 (0 to 516); the h-index was 0.64 (0 to 12); and the number of co-authors was 5.78 (0 to 127) (Table 1).

University	IBE (2015) Ranking	One or more papers	One or more papers over the past 5 years	One or more papers over the past year	Number of papers	H-index
UNMSM	189	Yes	Yes	No	6	2
UPCH	158	Yes	Yes	Yes	36	12
U. Nac. Altiplano	503	Yes	Yes	Yes	5	3
U. Nac. Centro	523	Yes	Yes	Yes	1	1
Vice Chancellors for Research featuring no published papers on SCOPUS Universidad Peruana de Ciencias Aplicadas, Universidad Nacional de San Antonio Abad del Cusco, Universidad Nacional de San Agustín, Universidad Nacional de Trujillo , Universidad Nacional de la Amazonía Peruana, Universidad Ricardo Palma, Universidad Nacional Federico Villarreal, Universidad Nacional de Piura, Universidad Privada Antenor Orrego, Universidad Nacional de Cajamarca, Universidad Nacional Pedro Ruiz Gallo, Universidad Nacional San Luis Gonzaga, Universidad Católica de Santa María, Universidad Nacional Jorge Basadre Grohmann, Universidad Nacional de San Cristóbal de Huamanga, Universidad César Vallejo, Universidad Alas Peruanas, Universidad Nacional Santiago Antúnez de Mayolo, Universidad Nacional Hermilio Valdizán, Universidad Nacional de Ucayali, Universidad Nacional José Faustino Sánchez Carrión, Universidad Nacional del Santa y Universidad Peruana Los Andes.						

IBE: Iberoamerica.
UNMSM: Universidad Nacional Mayor de San Marcos.
UPCH: Universidad Peruana Cayetano Heredia.
U. Nac. Altiplano: Universidad Nacional del Altiplano.
U. Nac. Centro: Universidad Nacional del Centro del Perú.

Table 1. Scientific Output of Vice Chancellors for Research featured on SCOPUS according to the IBE (Scimago) Ranking of Universities.

Regarding academic degrees, 22 Vice Chancellors for Research hold the degree of doctor, four hold a Bachelor's degree and two a Master's degree.

Discussion

The scientific output of Vice Chancellors for Research is generally poor. While most hold the academic degree required for the position under the new University Act, this requirement is not met by all.

Peruvian scientific output lags behind that of other Latin American countries [7]. While progress has been made in promoting research, such as the economic incentive fund for researchers of the National Science and Technology Council, it is still limited and incipient. Peru's budget allocation for research amounts to only 0.12% of the gross domestic product [14], which, compared to other Latin American countries, is small, whereas in Argentina it amounts to 0.61%, in Chile it stands at 0.38% and in Colombia it is 0.2% [9].

Other than scarce financial resources, a number of additional causes can be argued to account for the low scientific output. However, undoubtedly a major reason involving regulatory institutions is the fact that it is underestimated and discouraged. Low importance is attached to research in qualification processes, such as those conducted for admission to medical residency and for medical certification or recertification in Peru. It was not surprising, therefore, that the new provisions for completing a medical specialist program omitted the mandatory approval of a research thesis as a requirement for achieving the relevant degree [15]. This gives rise to situations such as poor scientific output by members of the National Academy of Medical Researchers [11]. In other words, culturally we lack clinical researchers, resources and incentives to complete a research career, which may be the reason for the low scientific output by Vice Chancellors for Research as members of an academic environment without a research culture.

Appointment of Vice Chancellors for Research in keeping with the proposed requirements and functions under the new University Act, and above all compliance therewith, should be a first step towards reversing this situation to provide actual support for research. However, this initiative is limited if people are not trained to fulfill the office for which they were appointed. In that sense, a Vice Chancellors for Research may not be able to properly lead the university's research policies if he or she has not had previous experience in research as verifiable in scientific publications.

A trained academic leader is known to have a positive influence on the scientific output of their institutions. This situation has been shown, for example, by Stravakis *et al*. who found that the academic success of an orthopedic surgery department was tied to the scientific output of the research director [13]. In our case, Ticse *et al.* found that a medical resident was more likely to publish a research thesis if he or she had a tutor with a high publication rate per year [16]. Likewise, it has been suggested that prestige in a university tends to be academically driven, i.e. that those activities generating results that are valued by the scientific community tend to have the highest status [17], [18]. In that sense, the less research universities show, the less prestige they will enjoy in the academic world. The fewer academic leaders at Peruvian universities, the less scientific output we will have as a country, which amounts to only 1.1% of the total scientific output in Latin America and 1.4% in the field of medicine [19].

The academic degrees shown by Vice Chancellors for Research evaluated are noteworthy, since not all of them hold the required doctoral degree to qualify for their position. Similar results have been found among deans of medical schools in Peru [12] and in other Latin American countries, such as Colombia [20]. In Peru, about half of the deans held a doctor's degree, while in Colombia [12], about one in four did [20]. These findings suggest that selection of candidates for both dean and Vice Chancellor for Research positions has not been rigorously evaluated, with the respective doubts over academic processes at universities. Similarly, they call into question the quality of PhDs of Vice Chancellors for Research, as they did not serve an academic career that is both productive and verifiable through published scientific papers.

Unfortunately, only three years after enactment of the new University Act, it is challenging to evaluate the results of policies implemented by Vice Chancellors for Research in compliance with their role, which could be assessed in terms of the scientific output of their universities, patents or university rankings in the medium or long term. However, while no specific research has been carried out on the scientific output of Vice Chancellors for Research or the influence of this research experience on the results of their efforts, results by Stravakis *et al*. suggest that this is likely to be significant [13]. In that sense, while it should be emphasized that publication of scientific papers in itself is not proof of leadership and management skills in research, we believe that exercising leadership without preaching by example and without knowledge of the limitations and barriers in the research and publication process, which can only be recognized by performing research, is no doubt challenging.

Our work experienced some limitations. First, it did not research the output of all Vice Chancellors for Research of the 57 universities with currently existing medical schools [21]. However, we confined evaluation to those with scientific papers in indexed databases and that are registered with the National Registry of Science and Technology Researchers as researchers by the National Science and Technology Council. Indirectly, without any scientific papers available in indexed databases, it may be held that excluded Vice Chancellors for Research belong to universities with a poor research profile. Secondly, the scientific output of Vice Chancellors for Research evaluated may have been published in non-indexed journals. However, use of the SCOPUS database as a source of our research ensures that the research produced has been peer-reviewed and meets quality standards. Lastly, certain

Vice Chancellors for Research may have been provisionally appointed while the universities adapt to the new University Act, if applicable. There may be a real desire to improve on the part of these universities and at this new stage the selection processes of the authorities may be rigorous.

Conclusion

In conclusion, the scientific output of Vice Chancellors for Research of the evaluated universities is poor, which would suggest limitations in the knowledge of research processes. This would difficult the development of leadership needed to enhance their scientific output and increase the academic prestige of their institutions.

The country should empower regulatory institutions such as the National Superintendence for Higher Education to play a leading role in supervising the minimum processes required for the proper functioning of universities, regardless of their current conditions.

Notes

From the editor

The authors originally submitted this article in Spanish and subsequently translated it into English. The Journal has not copyedited this version.

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