The Amount of Scientific Production of Ahvaz Jundishapur University of Medical Sciences on PubMed in 2000-2013

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Abstract: The amount of scientific output of the research and scientific centers is one of the most important criteria to assess them. This study has been conducted for investigating the rate of scientific production of the faculty members of Ahvaz Jundishapur University of Medical Sciences (AJUMS) on the PubMed database from 2000 until the end of 2013. To perform this study, all the existing forms of the university' name on PubMed database were searched by limiting the time frame; after the initial review and analysis the statistical results were compared with a list of the faculty members and then final analysis was done and the data were analyzed by SPSS 13. The findings of this study showed the scientific production of university in 2013 has reached to its maximum extent and is ascending. About half of the faculty members have participated in creating 801 articles in this time frame and medical school has had the highest rate of partnership. The participation of men as well as of the basic science departments has been considerable. Total amount of scientific production in the university in the years studied on the PubMed database was ascending. Of course, the need to engage all the academic members and educational departments is felt.

Key words: Production science, PubMed, Ahvaz Jundishapur University of Medical Science (AJUMS), faculty members, scientific production

INTRODUCTION

Nowadays, one of the most important criteria for determining the scientific status and authority of the countries in the sphere of the international scientific is level of the knowledge production and their research and applied achievements in promoting global science. So, emphasizing the research and increasing the research activities in every country will cause the development and progress and the real independence and self-sufficiency for the country (Jaderi, 2006). From the past so far the teaching and research mission of the universities have been considered side by side and the research and scientific studies have been considered as a complement to the training; on the other hand, it has a special position in a scientific cycle as scientific and academic productions in future education as a as the target science (Amirsalari *et al.*, 2008). Hence, now a days scientific development in every country is very important and is evaluated through the scientific activities of the country's researchers and the universities as the main base of science production play the important role in scientific growth and development in each country (Aminpur *et al.*, 2008). On the other hand, according to today's dramatic developments in the field of medical science, doing

research in this area promotes the progress of medical science and has a direct relationship with investigative and research activities in the universities, colleges and research centers affiliated with the medical field (Alijani and Karami, 2009).

Due to the importance of the global status of each university as a benchmark for scientific products of the university and the role that faculty members have in teaching and research at each university, studying the production of science in each university and some how its faculty members play a great role in improving and upgrading the current status in the upcoming years, removing the existing obstacles to research and development in addition to show its current position and the status. Of course, it is worth noting that the superior status of a university confirms a coherent planning and efforts in the field of research that can be used as a model in the scientific community of the country and successful programs of a university can be used to improve the status of other universities and scientific centers (Aminpur *et al.*, 2008). Now, one of the most important indices of science production in the world is the number of articles published in prestigious international journals and databases such as ISI (Alijani and Karami, 2008). In their study of the scientific productions of Shahrekord

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University of Medical Sciences on the ISI-SCIE database from 1993 until 2011, Mobasheri, concluded that the scientific productions of the aforementioned university in that target time frame have been ascending and most scientific production was related to the field of public internal medicine, health and pharmaceuticals, respectively. Articles have been published in journals during 2010 and a total of 393 authors have contributed in the production of the 142 articles, i.e., on average 2.77 people in writing every article (Mobasheri *et al.*, 2013). In a study of the state of the scientific production by faculty members at Gilan University of Medical Sciences, conducted by Sobhani *et al.* (2008), the results indicated that the rate of scientific production of faculty members has been of very significant growth in these 5 years; furthermore, the medical school has had the largest number of articles compared to other schools and the internal medicine department the largest number of articles compared to other departments. In a study of the scientific production, the Urmia University of Medical Sciences on Scopus, WOS and PubMed from 2001-2011, Doolani *et al.* (2013) concluded that the scientific production in that university has been ascending and 68% of the faculty members have contributed in the production of the articles and most articles have been the on the thematic orientation of Surgery, Microbiology, Immunology, Transplantation, Urology, Nephrology and Orthopedics (Doolani *et al.*, 2013). In a study conducted by Belinchon and Ramos (2008) to examine the scientific production of the Spanish Department of the Skin in the international journals during 1997-2006, the results indicated that in in this field Spain remains in its previous position in the past decade. In a study, Khan investigated changes in the number of volumes of South African journals indexed in the Web of Science in the period 1990-1994 and 2004-2008. This study showed that the number of volumes in the specified time period has been increased. Among the reasons for this increase can be due to the increased financial aid for publishing educational articles, focus on fields that tend to publicize and produce a lot of science in such as infectious diseases, increasing the number of articles that were written in collaboration with foreign researchers (Kahn, 2011). Negahban *et al.* (2014) investigated the process of growth and development of articles by faculty members at Zahedan University of Medical Sciences on the ISC database. The results showed that scientific production per year compared to the previous year was of a limited growth; furthermore, the Medical School, Rehabilitation School and Health School had the largest amount of scientific production, respectively. Among the departments the most outputs were related to the Internal Medicine and then the Anatomy and Infectious

Diseases, respectively (Negahban *et al.*, 2014). In his research, Ehtesham investigated scientific productions of researchers at Birjand University of medical sciences on the WOS databases in 2000-2011. The results of the study suggest that the scientific production trends of the university has been ascending; furthermore, most articles were related to the field of toxicology and most of the production was related to the year 2009; moreover, out of 119 faculty members just 38 people had the article indexed in this database; on the other hand, findings represent the dispersion of published article sources (Ehtesham, 2012). In their study of scientific output of editorial board members of the evolutionary ecologists and biologists journal in addition to reviews of H-index and relevant results, Kelly and Jennions (2006) found that number of articles of the female scientists has generally been lower than the male scientists' one. The present study examined the amount of scientific production by faculty members of Ahvaz Jundishapur University of Medical Sciences (AJUMS) on the PubMed database from 2000- 2013.

MATERIALS AND METHODS

This was a descriptive cross-sectional study. The study population was all articles which their organizational affiliations with the AJUMS have been announced. Data gathering tools were a list of university names translated for searching on PubMed as well as a list of the faculty members of the AJUMS. In analyzing the data the descriptive statistical techniques (frequency and percentage) were used. To search for data at first, all forms of translation of the AJUMS' name with all structures (common and non-common) and the possibilities available on the PubMed database were searched. Then, the results in a TXT format were transferred to the SPSS version 13 and analyzed based on the year and the most commonly used journals. In the next step, using a list of the faculty members' names their names in the list of articles were searched and the number of articles of each was inserted in front of their name and other specifications available. The required analysis then was performed on the basis of the most published author, the most published faculty and departments. For analyzing the data the SPSS version 13 was used.

RESULTS AND DISCUSSION

Based on the latest list of faculty members, AJUMS has 603 faculty members that 290 people (about 50%) have articles indexed in PubMed which of these 83 people (28.6%) are women and 207 people (71.3%) are men. The

rate of the scientific production of faculty members of the AJUMS during a 14 years period has been 801 articles and given the number of faculty members who have contributed in this scholarly production rate, therefore, it can be said that 2.76 persons on average have participated in writing each article. According to Fig. 1, the trends of scientific output of the AJUMS during the long years mostly have been ascending and during the year 2013 the most amount of scientific production has been occurred.

The most published authors in the present collection respectively are: Fakher Rahim from the Department of Genetics (with tendency in the molecular medicine field) with 52 articles; Najmaldin Saki from Department of Medical Laboratory Sciences (with tendency in the hematology and blood banking) with 35 articles and Alireza Sarkaki from Department of Physiology with 35 articles. The top 10 persons in terms of number of articles are related to the departments of Genetics, Physiology, Laboratory Sciences, Biostatistics, Medical Biochemistry, Histology, Endocrinology and Metabolism, ENT, Immunology and Serology. Articles by faculty members have been published in >100 titles of journals that
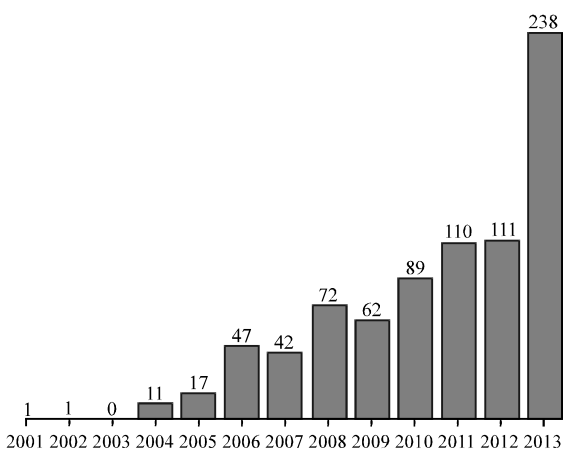
according to Table 1 the greatest cases were related to Pak J. Biol. Sci. and then Conf. Proc. IEEE Eng. Med. Biol. Soc. (Table 1).

According to Table 2, the maximum number of articles is related to the medical school and the lowest is related to the school of nursing and midwifery.

In the school of public health the two departments: most published and low published on PubMed includes Biostatistics, Environmental Health and Health Sciences, Health Education, respectively. The maximum number of articles of this school was related to Sayed Mahmoud Latifi from the field of Biostatistics with 30 articles, Mohammad-Hossein Haghighizadeh from the field of Biostatistics with 12 articles and Bahman Cheraghian from Department of Epidemiology with eight articles, respectively.

In nursing and midwifery faculty both departments: most published and low published on the PubMed were Midwifery, Nursing, Community Health Nursing and Nursing Education, respectively. The maximum number of articles was related to Parvin Abedi from the Department of midwifery with seven articles, Kourosh Zare from nursing with three articles, Shahnaz Najar and Mitra Tadayon-Najafabadi from the Department of midwifery each with two articles, respectively.

In the school of medicine the most published and low published departments on PubMed include Physiology, Anatomy (with all tendencies) and Emergency Medicine and Medical Physics, respectively. Most articles in the

Fig. 1: The process of science production in the AJUMS on the PubMed database during years of 2000-2001

Table 1: The journals having the highest acceptance of articles of faculty members of AJUMS

Journal name	The number of published articles
Pac. J. Boil. Sci.	43
Conf. Proc. IEEE Eng. Med. Boil. Soc.	18
Iran Biomel J.	17
World J. Gastroenterol	13
Iran J. Pharm. Res.	11
J. Res. Med. Sci.	11
Arch. Iran Med.	11
Saudi Med. J.	10
Total	134

Table 2: A comparison between the distribution of faculty members and a number of articles of schools of AJUMS on PubMed from 2000-2013

Name of schools	The number of faculty members	The number of faculty members with an article on every school	Percent of faculty members with an article on any school	The frequency of repetition of the name of the faculty members in articles	The ratio of articles to contribution of facult ymembers
Medicine	344	192	55.8	1047	5.45
Para Medicine	41	19	46.3	133	7.00
Health	45	12	26.6	98	8.16
Pharmacy	32	18	56.2	97	5.38
Dentistry	68	15	22.0	48	3.20
Rehabilitation	30	11	36.6	47	4.27
Nursing and midwifery	34	12	35.2	24	2.00

school of medicine were related to Alireza Sarkaki from the Department of Physiology with 35 articles, Mohammad Ali Ghaffari from the Medical Biochemistry Department with 27 articles, Mohammad Orazizadeh from Histology Department with 26 articles and Hajieh Bibi Shahbazian from the Department of Endocrinology and Metabolism with 26 articles, respectively.

In the school of Paramedicine, the most published and low published departments on PubMed include the laboratory science and the health information technology, respectively. Most articles were related to Najmaldin Saki with 35 articles, Mohamad Taha Jalali from Department of Laboratory Sciences with 18 articles and Reza Amani from Department of the nutrition science with 15 articles, respectively.

In terms of the scientific production in the Rehabilitation school the most published department on PubMed was the Department of Physiotherapy and the low published departments on PubMed include Occupational Therapy, Speech Therapy and Mechanical Engineering departments. Most articles were related to Hossein Negahban Seuki with 15 articles, Reza Salehi with 6 articles and Shahin Goharpey from the Department of Physical Therapy with five articles, respectively.

In the school of pharmacy the most published departments on PubMed were Pharmacy and Toxicology equally and low published departments were Pharmaceutics, pharmacogenosy and Analytical Chemistry. Most articles were related to the Ardeshir Arzi from Pharmacy Department with 16 articles, Heibatallah Kalantari from Toxicology Department with 15 articles and Ali Asghar Hemmati from the Pharmacology Department with 13 articles, respectively. In the Dentistry School, the most published and low published departments the in terms of production of science on the PubMed were respectively Orthodontics, Dental Prosthodontics Department and Restorative Dentistry, Periodontics Department. Most articles were related to Marzia Mazhari (Orthodontics), Asadollah Ahmadzadeh (Porosthodontics) each with 10 articles, Mashalah Khaneh Masjedi (Orthodontics), Leila Basir (Department of Pediatric Dentistry) each with four articles, Lila Golpasandhagh and Faramarz Zakavi (Department of Restorative Dentistry) each with three articles, respectively.

Based on Fig. 2, most outputs were respectively related to the Departments of Physiology, Anatomy (all trends), Pediatrics (all trends), Laboratory Science, Biostatistics, Nutrition Sciences and Physiotherapy.

The present study showed that the rate of scientific production of faculty members of JUMS in the year 2000-2013 has an ascending so that from 1 article has
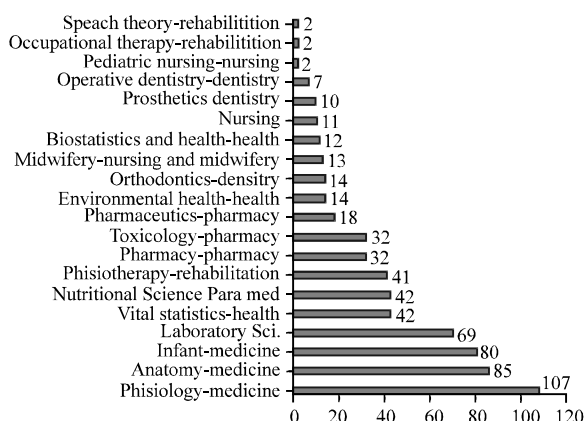

Fig. 2: A comparison between the most published departments of the Schools of Ahvaz Jundishapur University of Medical Sciences

been increased to 238 articles during a 14 years time frame in the present century. The present findings are consistent with the results of the studies conducted by Mobasheri *et al.* (2013), Doolani *et al.* (2013) and Ehtesham (2012).

The findings suggest that about 50% of the faculty members participated in producing articles on PubMed database. This rate in the study by Ehtesham (2012) is about 32%.

The findings suggest that contribution of male faculty members (71.3%) is more than female faculty members (28.6%). In his study, Kelly and Jennions (2006) showed that contribution of male scientists is more than the contribution of the female scientists.

The findings indicate that 290 people out of 603 faculty members of the University have 801 articles indexed on PubMed that the rate of participation in writing each article on average is 2.77. This amount is consistent with the study by Mobasheri *et al.* (2013); furthermore, average of Iranian authors in MEDLINE is the same amount.

The findings suggest that articles have been published in >100 titles of journals but the 134 articles were published in eight journals. The study by Mobasheri *et al.* (2013) and Ehtesham (2012) also showed the distribution of articles in the scattered journals.

The findings indicate among the schools of the University the most rate of the scientific output were respectively related to the Medicine, Paramedicine and Health that with respect to be expansive current departments, dating and scientific degrees the science production in each is different and have widespread departments compared with the other schools. In a study

by Mobasheri *et al.* (2013), Sobhani *et al.* (2008) and Negahban *et al.* (2014), also School of Medicine in terms of the number of faculty members and departments covered were of the largest number of articles.

The findings suggest that among the Departments the Anatomy, Physiology (all trends), Pediatrics (all trends), Laboratory Science, Biostatistics, Nutrition Sciences and Physiotherapy have the most scientific output (five top educational departments) are among the other departments available that represent the basic science departments are in the first and second ranks, compared to other departments. Of course by taking into account the sub-trends included and the number of faculty members this ratio seems logical. In a study by Sobhani *et al.* (2008), Doolani *et al.* (2013) and Negahban *et al.* (2014) also certain departments (usually from the medical school) have been located at the top of the most published departments except for the study by Ehtesham (2012) that the most production relates to the Toxicology Department.

CONCLUSION

This study showed that the rate of scientific production of the AJUMS is ascending. Of course, there will be a need to participate all scientific members in this direction and its improving trend in future years; on the other hand, creating the right platform for study and research, applied research, spending the appropriate budget in performing the applied and strategic research is very important.

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