

Research Ranking of Iranian Universities of Medical Sciences Based on International Indicators: An Experience From I.R. of Iran

Monir Baradaran Eftekhari, MD, PhD¹; Zahra Sobhani, MSc¹; Masoumeh Eltemasi, MSc¹; Elham Ghalenoee, MSc¹; Katayoun Falahat, MSc¹; Elham Habibi MSc¹, Shirin Djalalinia, PhD¹; Niloofar Paykari, PhD¹; Asghar Ebadifar, DDS, MSd^{1,2*}; Shahin Akhondzadeh, PhD^{1,3}

¹Deputy of Research and Technology, Ministry of Health and Medical Education, Tehran, Iran

²Dentofacial Deformities Research Center, Research Institute of Dental Sciences, Department of Orthodontics, Dental School, Shahid Beheshti University of Medical Sciences, Tehran, Iran

³Psychiatric Research Center, Tehran University of Medical Sciences, Tehran, Iran

Abstract

Background: In recent years, international ranking systems have been used by diverse users for various purposes. In most of these rankings, different aspects of performance of universities and research institutes, especially scientific performance, have been evaluated and ranked. In this article, we aimed to report the results of research ranking of Iranian universities of medical sciences (UMSs) based on some international indicators in 2015.

Methods: In this study, after reviewing the research indicators of the majority of international ranking systems, with the participation of key stakeholders, we selected eight research indicators, namely research output, high-quality publications, leadership, total citations, citations per paper in 2015, papers per faculty member and h-index. The main sources for data gathering were Scopus, PubMed, and ISI, Web of Science. Data were extracted and normalized for Iranian governmental UMSs for 2015.

Results: A total of 18023 articles were indexed in 2015 in Scopus with affiliations of UMSs affiliation. Almost 17% of all articles were published in top journals and 15% were published with international collaborations. The maximum h-index (h-index = 110) belonged to Tehran University of Medical Sciences. The average paper per faculty member was 1.14 (Max = 2.5, Min = 0.13). The mean citation per published articles in Scopus was 0.33.

Conclusion: Research ranking of Iranian UMSs can create favorable competition among them towards knowledge production.

Keywords: International ranking, Iran, Medical science, Research, University

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Introduction

The World Health Organization (WHO) has defined health research system (HRS) as people, institutions, and activities whose primary purpose is to generate high quality knowledge to promote community health outcomes and improve health equity.¹ This system includes four main functions, including stewardship, financing, creating and sustaining resources, and producing, synthesizing, and utilizing research. In order to achieve the best performance of this system, it is necessary to set up an efficient evaluation program which is defined as one of the critical components of stewardship.² In Iran, in 2002, the Ministry of Health and Medical Education (MOHME) launched the Iranian Medical Research Evaluation System (IMRES) in order to promote scientific competition and incentives among medical researchers and Universities of Medical Sciences (UMSs).^{3,4}

In recent years, international rankings of universities

and research institutions have quickly obtained popularity and attracted much attention such as Times Higher Education-QS,⁵ Academic Ranking of World Universities,⁶ Scimago Institutions Ranking (<http://www.scimagoir.com>), Essential Sciences Indicators (<https://esi.incites.thomsonreuters.com/IndicatorsAction>) and so on. Nowadays, these rankings play an important role in decision making of universities. Each ranking system focuses on one or a combination of multiple dimensions of university performance, but most consider scientific disciplines. Research indicators are common in most of them such as number of published articles (output), number of citations, international cooperation etc. Reviews of international ranking systems indicate that although Iran has obtained many national and international promotions in knowledge production domain, it is necessary to multiply efforts in order to achieve a better position in international ranking systems.⁷

*Corresponding Author: Asghar Ebadifar, 13th Floor, Block A, Deputy for Research and Technology, Ministry of Health & Medical Education, Tehran, Iran. Tel: +98-21-81455181, Fax: +98-21-81455191, Email: a.ebadifar@sbum.ac.ir

In other words, considering the “output” indicator, Iran ranks 16 out of 229 participating countries in 2014 according to Scimago country ranking system which is based on Scopus database (<http://www.scimagojr.com/countryrank>) and 22 out of 152 participated countries in 2015 according to ESI ranking system which is based on the Web of Science database (<https://esi.incites.thomsonreuters.com/IndicatorsAction.action>). Nevertheless, Iran suffers in some quality indicators such as citation-based indicators that have caused a sharp fall (134 out of 229 countries in 2014 according to Scimago country ranking) in Iran’s position.

It is obvious that IMRES has been greatly successful in increasing the quantity of articles; it is now necessary to improve the qualitative research indicators. In this regard, limitations and fundamental differences which exist in different university ranking systems such as the combination of multiple universities performance, using a different database (Scopus, Web of Science etc.) or employing different classifications of scientific fields etc. will lead to not only floating international position of each UMS but also the absence of most UMSs in different international ranking systems. In the present study, we selected some international research indicators to compare and rank the scientific performance of all Iranian UMSs. The results of this study will determine the international position of these UMSs and help us to direct them to produce high quality knowledge and be more actively present on the international scientific scene.

Materials and Methods

Iranian UMSs are approved and ruled by governmental, non-governmental and private sectors. All governmental UMSs are approved by Developing, Monitoring and Evaluation council in the MOHME and categorized in 3 classes as class I, class II and class III based on organizational structure. Currently, there are 9 UMSs in

class I, 22 UMSs in class II and 23 in class III. In this study, all Iranian UMSs of 3 types participated.

Study Design

This study was conducted in 2 qualitative and quantitative phases. In the first phase which was performed using the qualitative method, all different existing national and international university ranking systems were reviewed by four researchers of the study team members who were experts in Scientometrics. Based on the aim of study, indicators related to scientific/research university performance were extracted. Simultaneously, an expert committee was formed, comprising key stakeholders such as deputies for Research and Technology of eight major UMSs, experts of Scientometrics, deputy minister for Research and Technology, members of Research Monitoring and Evaluation team member from Undersecretary for Research and Technology – MOHME. All participants were recruited based on their expertise in various areas of university ranking. During sessions which were held in the office of the Undersecretary for Research and Technology, MOHME, the participants discussed the extracted research indicators, definition of research indicators, the criteria for selection, gathering data collection and its procedures, time interval in data collection and weighting and calculating indicators. Based on participants’ opinions, the criteria for selecting and weighting research indicators consisted of importunity, measurability, comprehensiveness, and simplicity. A 5-point rating scale (1, 1.5, 2, 2.5, and 4) was used in indicators weighting. Finally, the five sessions resulted in selection of 8 research indicators as described in Table 1.

In the quantitative phase, data on the publication of all Iranian UMSs were collected considering unique search strategy from Scopus database except the number of the academic members which was supplied by UMSs. The gathered data were entered into Excel sheet and the raw score was calculated for each UMS. Then, based on score

Table 1. Characteristics of Research Indicators Used in Research Ranking of Iranian Universities of Medical Sciences

No	Indicators	Definition	Source of Data	Weight	Period
1	Research output	The number of published article in scientific journals	Scopus, Pub med, ISI	2.5	2015
2	High quality publication (Q1)	The number of Published article in 25% of the top journals in each category*	Scimago Journal Rank (SJR)	2.5	2014
3	International cooperation (IC)	Number of published article with international cooperation/ total published articles	Scopus	1.5	2015
4	Leadership (L)	Number of published article that corresponding authors are related to the medical science university	Scopus	1.5	2015
5	Five-year citation (5-y C)	Number of citation in 2015 to five year published article (2011-2015)	Scopus	4	2015
6	Citation/paper 2015 (C/P)	Number of citation to published article in 2015	Scopus	2	2015
7	Paper/faculty member (P/F)	Number of published article/ number of faculty member	Scopus, PubMed, ISI/ MOHME	2	2015
8	H-index	H-index for total published article in journals	Scopus	1	Up to 2015

*All journals in Scimago journal raking (SJR) have been categorized in 27 subject area and around 300 subject categories. All 25% top of each subject categories journals (Q1) were extracted from SJR. Then the Q1 list was compared with Each UMS research output separately.

100, normalized scores were calculated, i.e. the highest score was considered as 100 and the rest were adjusted on this basis. The final score was estimated by multiplying weights by the normalized score (weighted score). Data extraction lasted from July to September 2016. Since the research activities are evaluated annually with a one-year delay, this paper presents the results of the latest evaluation conducted in 2015.

The search strategy implemented in data gathering from databases was: (A) Finding the university address in “affiliation search” section in the database; (B) Selecting the relevant affiliations for documents showing; (C) Limiting document results to publication year “2015” and source type to “journals”; (D) Excluding document types “conference paper” and “books” from document results. In this project, all ethical aspects have been considered.

Results

The results are presented in 2 sections. At first, national information related to research in medical sciences field (Figure 1) and then research indicators will be reported for different classes of UMSs (Tables 2–4).

In this study, 54 UMSs in three classes (I, II, III) participated. The number of indexed articles in Scopus with UMSs’ affiliation was 18023 in 2015. Among them, the affiliations of the corresponding authors in 8286 articles were related to UMSs (leadership). Also, at the same time, 2436 articles were published with international collaborations. The number of published articles in 25% of the top journals (Q1) was 3070 (almost 17% of all published articles) (Figure 1).

The maximum h-index (h-index = 110) belonged to Tehran University of Medical Sciences. The average paper per faculty member was 1.14 (Max = 2.5, Min = 0.13). The mean citations per published paper indexed in Scopus in 2015 was 0.33. In other words, only one-third of published articles in 2015 had citations in 2015 (Max

= 1.3). Total citations to UMSs published articles over the past 5 years were 91932 in 2015 of which almost one-third pertained to Tehran University of Medical Sciences.

In class I UMSs, Tehran, Shahid Beheshti and Mashhad UMSs ranked first to third, respectively. But the role of each academic member in getting research score was completely different. The contribution of each faculty member in Tehran, Shahid Beheshti and Mashhad UMSs was 0.96, 0.64 and 0.8, respectively.

In class II UMSs, Pasteur Institute, Mazandaran and Baghyatallah UMSs ranked first to third, respectively. The role of academic members in getting score in these institutes was 9.46, 3.13 and 4.61, respectively.

In class III UMSs, Shahrekord, Kordestan, and Ilam UMSs ranked first to third and the role of academic members in getting the score in these universities was 7.12, 4.54 and 6.32, respectively.

Discussion

Knowledge production as a key function in HRS is a universal public good that has been produced by health research and if disseminated widely, it leads to proper policies, activities, and performance of health system and finally can improve community health.^{8,9} Also, the global effort to generate new knowledge to address the problems is a vital element in achieving the Millennium Development Goals.¹⁰

Review of results indicates that the leadership in Iranian published articles was less than 50%. It means that only in half of the cases, the project ownership was related to UMSs and in other cases, they participated in the study plan.

Almost 17% of published articles were high-quality publications (Q1). In 2013, the number of published medical science articles in high quality (Q1) journals was smaller than 1000, but this number has reached

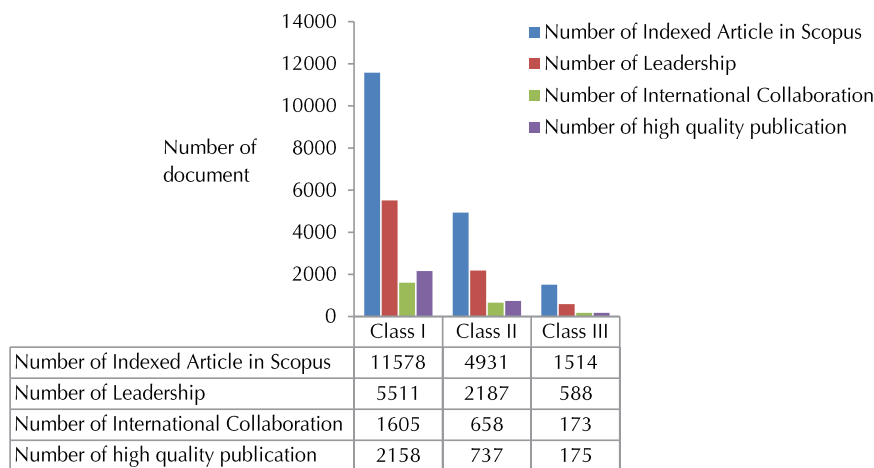


Figure 1. Number of Articles, Leadership, High Quality Publication (Q1) and International Collaboration in 3 Classes of Iranian UMSs in 2015.

Table 2. Research Indicators in Class I Universities of Medical Sciences in 2015

Name of University	Scores	No. of Faculty member	Output	H-index	Paper/Faculty Member	No. of Citation 2015	No. of 5-Year Citation	No. of Q1	IC (Scopus)	No. of Leadership	Total Score ^c
Tehran	RS ^a	1739	4345	110	2.5	1221	26016	766	0.16	1476	1683.3
	WS ^b	-	(250)	(100)	(200)	(200)	(400)	(250)	(133.3)	(150)	
Shahid Beheshti	RS	1397	2283	77	1.63	606	9257	389	0.14	796	897.6
	WS	-	(131.3)	(70)	(130.4)	(99.2)	(142.3)	(126.9)	(116.6)	(80.9)	
Mashhad	RS	855	1317	56	1.54	520	5364	183	0.18	553	683.37
	WS	-	(75.7)	(50.9)	(123.2)	(85.17)	(82.5)	(59.7)	(150)	(56.2)	
Isfahan	RS	766	1638	70	2.14	264	6460	147	0.11	620	674
	WS	-	(94.2)	(63.6)	(171.2)	(43.2)	(99.3)	(47.9)	(91.6)	(63)	
Tabriz	RS	787	1330	56	1.69	313	4914	183	0.14	536	620.2
	WS	-	(76.5)	(50.9)	(135.2)	(51.3)	(75.5)	(59.7)	(116.6)	(54.5)	
Shiraz	RS	874	1416	60	1.62	273	5420	166	0.1	583	590.17
	WS	-	(81.4)	(54.5)	(129.6)	(44.7)	(83.3)	(54.17)	(83.3)	(59.2)	
Iran	RS	785	1445	51	1.84	282	1813	189	0.15	423	580.5
	WS	-	(83.1)	(46.4)	(147.2)	(46.2)	(27.9)	(61.7)	(125)	(43)	
Kerman	RS	428	532	46	1.24	107	1861	72	0.12	192	360.7
	WS	-	(30.6)	(41.8)	(99.2)	(17.5)	(28.6)	(23.5)	(100)	(19.5)	
Ahvaz	RS	657	656	34	1	117	2104	63	0.05	332	296
	WS	-	(37.7)	(30.9)	(80)	(19.2)	(32.3)	(20.6)	(41.6)	(33.7)	

^a Raw Score; ^b Weighted Score = Normalized score multiplied by weight; ^c Σ (weighted score); for example: in Tehran UMS, the total score is 1683.3 which is the sum of weighted scores (250 + 100 + 200 + 200 + 400 + 250 + 133.3 + 150).

more than 3000 in 2015. It seems that adopting proper policies to establish the new research evaluation system and encouraging researchers to publish in these journals have been somewhat useful. Also, the number of Iranian high-quality journals based on Scimago Journal Rank (SJR) has improved from 1 in 2013 to 6 in 2015 (<http://www.scimagojr.com/countryrank.php?area=2700®ion=Middle%20East&year=2015>). It is obvious that increasing the quality of publications can raise the number of citations.

More than 13% of published articles were written by international cooperation, which was 8 in 2013.¹¹ International cooperation may grant many benefits such as access to knowledge, skills, infrastructure or funding from elsewhere which may contribute to improved quality of research.^{12,13} Based on Zaida Chinchilla's study in 2014 related to Latin American scientific output in public health, Cuba, among the top 10 Latin American producers of documents, was the least visible country. This was due to a low percentage of documents in high-quality journals (Q1) and low rate of collaboration.¹⁴

The mean number of citations per published paper indexed in Scopus related to Iranian UMSs was 5.51. But this indicator was 5.86 in all fields in Iran (<http://www.scimagojr.com/countryrank.php?area=2700®ion=Middle%20East&year=2015>). It may be due to types of researches done in UMSs.¹⁵ From 2013 to 2015, the number of citations to published articles increased by 20%, which could indicate an increase in quality of articles.

Based on Scimago country rank, in 2015, comparison of Iran and other Eastern Mediterranean countries

reveals that the number of documents in medicine field was 10323 and 4874 in Iran and Israel, respectively. Citations per document were 2.13 in Iran and 1.89 in Turkey (<http://www.scimagojr.com/countryrank.php?area=2700®ion=Middle%20East&year=2015>).

In 2015, according to Scopus, the number of documents in medical sciences in Iran, Turkey and Egypt was 12577, 12336 and 1445, respectively.

According to Scimago country rank, in 2016, Iran's h-index in medical field was 146 and based on our results, Tehran UMS h-index is only 110. Tehran UMS has more than 90 active research centers and good international cooperation with famous research institutes in the world.¹⁶ This university accounts for one-third of total citations among UMSs in Iran (<http://www.scimagojr.com/countryrank.php?area=2700®ion=Middle%20East&year=2016>).

Review of our results shows that almost 70% of research output pertains to class I UMSs, 25% to type II, and 5% to class III UMSs. It is necessary that based on contribution of UMSs in knowledge production and according to research priorities, the policy makers should adopt evidence-based policies to direct each class of UMSs to perfect destination.^{4,17}

Our study has some weaknesses such as lack of attention to input indicators like manpower, budget, infrastructure and so on. Assessing research output, regardless of input, cannot accurately reflect the research potential of the universities. In addition, in some cases, using the different affiliations by Iranian researchers can limit the accessibility of documents in main databases. It seems that it is necessary to mobilize different disciplines such

Table 3. Research Indicators in class II Universities of Medical Sciences in 2015

Name of University	Output (WS)	H-index (WS)	No. of Faculty Member	Paper /Faculty Member (WS)	No. of Citation 2015 (WS)	No. of 5-Year Citation (WS)	No. of Q1 (WS)	IC (WS)	No. of Leadership (WS)	Total Score
Pasteur Institute	413 (203.99)	57 (100)	143	2.89 (171.82)	121 (93.08)	3038 (400)	80 (219.78)	0.20 (81.25)	136 (83.95)	1353.87
Baghyatallah	499 (236.75)	40 (70.18)	267	1.87 (111.19)	162 (124.62)	1922 (253.06)	91 (250)	0.19 (78.31)	174 (107.41)	1231.51
Social Welfare & Rehabilitation	289 (132.9)	34 (59.65)	162	1.78 (1.6.13)	64 (49.23)	959 (126.27)	52 (142.86)	0.37 (150)	94 (58.02)	825.07
Mazandaran	575 (250)	47 (82.46)	394	1.46 (86.82)	260 (200)	2102 (276.76)	54 (148.35)	0.10 (39.42)	243 (150)	1233.82
Kermanshah	492 (224.93)	35 (61.40)	380	1.29 (77.03)	95 (73.08)	1387 (182.62)	56 (153.85)	0.12 (47.87)	204 (125.93)	946.7
Kashan	234 (114.1)	24 (42.11)	195	1.20 (71.39)	34 (26.15)	615 (80.97)	20 (54.95)	0.07 (30.44)	95 (58.64)	478.75
Yazd	374 (173.79)	29 (50.88)	364	1.03 (61.13)	73 (56.15)	1087 (143.12)	38 (104.40)	0.09 (35.49)	107 (66.05)	691.01
Semnan	175 (77.07)	26 (45.61)	191	0.92 (54.51)	35 (26.92)	435 (57.27)	15 (41.21)	0.12 (48.56)	69 (42.59)	393.75
Hamadan	389 (174.36)	33 (57.89)	428	0.91 (54.07)	94 (72.31)	1235 (162.61)	42 (115.38)	0.12 (47.70)	169 (104.32)	788.65
Babol	286 (123.5)	30 (52.63)	321	0.89 (53.01)	34 (26.15)	781 (102.83)	19 (52.20)	0.05 (20.71)	128 (79.01)	510.05
Zahedan	298 (139.46)	29 (50.88)	344	0.87 (51.54)	37 (28.46)	730 (96.12)	18 (49.45)	0.09 (36.85)	82 (50.62)	503.37
Lorestan	166 (76.07)	28 (49.12)	218	0.76 (45.30)	68 (52.31)	786 (103.49)	10 (27.47)	0.08 (33.69)	39 (24.07)	411.53
Qazvin	188 (84.9)	23 (40.35)	264	0.71 (42.37)	24 (18.46)	683 (89.93)	21 (57.69)	0.17 (69.28)	69 (42.59)	445.58
Arak	172 (83.9)	30 (52.63)	248	0.69 (41.26)	212 (163.08)	761 (100.20)	20 (54.95)	0.13 (54.96)	36 (22.22)	573.2
Zanjan	212 (99.57)	30 (52.63)	307	0.69 (41.08)	58 (44.62)	684 (90.06)	36 (98.90)	0.09 (36.62)	71 (43.83)	507.31
Golestan	186 (87.32)	31 (54.39)	279	0.67 (39.66)	40 (30.77)	707 (93.09)	18 (49.45)	0.19 (78.85)	54 (33.33)	466.86
Urmia	222 (102.28)	24 (42.11)	339	0.65 (38.96)	48 (36.92)	740 (97.43)	28 (76.92)	0.14 (57.54)	80 (49.38)	501.55
Gilan	268 (127.35)	28 (49.12)	411	0.65 (38.79)	38 (29.23)	702 (92.43)	23 (63.19)	0.12 (47.93)	86 (53.09)	501.13
Ardebil	119 (56.84)	23 (40.35)	187	0.64 (37.86)	34 (26.15)	314 (41.34)	19 (54.20)	0.15 (60.04)	30 (18.52)	333.3
Hormozgan	153 (63.11)	19 (36.84)	246	0.62 (37)	14 (10.77)	493 (64.91)	8 (21.98)	0.05 (21.07)	46 (28.40)	284.07
Birjand	115 (55.98)	22 (31.58)	212	0.54 (32.27)	12 (9.23)	236 (31.07)	11 (30.22)	0.06 (23.15)	36 (22.22)	235.73
Rafsanjan	87 (41.45)	25 (43.86)	187	0.47 (27.68)	18 (13.85)	463 (60.96)	6 (16.48)	0.12 (48.64)	36 (22.22)	275.15

as educational services, continuing educational programs, student research committees and so on to empower the researchers in scientific writing, search strategies etc.¹⁸

In our study, the major data source of documents was Scopus. This database has high coverage in a

multidisciplinary field. On the other hand, all UMSs in all classes participated in this study. The results of this evaluation can indicate the research position of each UMS and enhance the incentive for their competition in knowledge production.

Table 4. Research indicators in class III universities of medical sciences in 2015

Name of University	Output (WS)	H-index (WS)	No. of Faculty Member	Paper /Faculty Member (WS)	No. of Citation 2015 (WS)	No. of 5-Year Citation (WS)	No. of Q1 (WS)	IC (WS)	No. of Leadership (WS)	Total Score
Alborz	188 (221.96)	13 (28.89)	164	1.15 (181.28)	44 (40.74)	457 (105.12)	17 (193.18)	0.13 (69.72)	41 (56.42)	897.31
Artesh	129 (140.20)	16 (35.56)	128	1.01 (159.38)	14 (12.96)	265 (60.95)	16 (181.82)	0.11 (62.17)	45 (61.93)	714.97
Ilam	172 (174.32)	24 (53.33)	136	1.26 (200)	35 (32.41)	558 (128.35)	8 (90.91)	0.14 (75.18)	64 (88.07)	842.58
Abadan	18 (16.89)	4 (8.89)	31	0.58 (91.82)	2 (1.85)	15 (3.45)	1 (11.36)	0.00 (0)	8 (11.01)	145.28
Bam	14 (14.19)	2 (4.44)	45	0.31 (49.20)	2 (1.85)	27 (6.21)	1 (11.36)	0.08 (45.83)	1 (1.38)	134.47
Boushehr	121 (144.26)	21 (46.67)	175	0.69 (109.34)	28 (25.93)	397 (91.32)	16 (181.82)	0.17 (94.62)	48 (66.06)	760.01
Behbahan	2 (2.03)	2 (4.44)	16	0.13 (19.77)	1 (0.93)	2 (0.46)	0 (0)	0.00 (0)	1 (1.38)	29
Torbat Heydariyeh	15 (17.57)	3 (6.67)	38	0.39 (62.42)	0 (0)	7 (1.61)	5 (56.82)	0.07 (39.29)	6 (8.26)	192.63
Jahrom	88 (89.19)	16 (35.56)	110	0.80 (126.51)	10 (9.26)	157 (36.11)	8 (90.91)	0.08 (42.31)	30 (41.28)	471.13
Jiroft	17 (15.54)	5 (11.11)	61	0.28 (44.07)	0 (0)	20 (4.60)	1 (11.36)	0.00 (0)	7 (9.63)	96.32
North Khorasan	70 (79.73)	11 (24.44)	132	0.53 (83.86)	22 (20.37)	167 (38.41)	9 (102.27)	0.10 (53.92)	13 (17.89)	420.9
Dezful	21 (24.66)	4 (8.89)	49	0.43 (67.77)	4 (3.70)	30 (6.90)	3 (34.09)	0.12 (64.71)	7 (9.63)	220.36
Zabol	76 (89.53)	11 (24.44)	145	0.52 (101.85)	20 (18.52)	161 (37.03)	6 (68.18)	0.16 (90)	20 (27.52)	438.11
Saveh	6 (6.08)	2 (4.44)	21	0.29 (45.18)	0 (0)	13 (2.99)	0 (0)	0.20 (110)	1 (1.38)	170.07
Sabzevar	97 (101.35)	10 (22.22)	145	0.67 (105.79)	13 (12.04)	130 (29.90)	10 (113.64)	0.12 (67.90)	16 (22.02)	474.86
Shahrood	75 (87.50)	14 (31.11)	95	0.79 (124.85)	26 (24.07)	287 (66.01)	7 (79.55)	0.11 (62.10)	16 (22.02)	497.21
Shahrekord	236 (250)	45 (100)	211	1.12 (176.88)	135 (125)	1739 (400)	14 (159.09)	0.06 (34.74)	109 (150)	1395.7
Fasa	68 (77.08)	16 (35.56)	99	0.69 (122.2)	13 (12.04)	192 (44.16)	5 (56.82)	0.15 (80.21)	7 (9.63)	424.06
Qom	138 (161.49)	16 (35.56)	172	0.80 (126.88)	20 (18.52)	316 (72.69)	9 (102.27)	0.04 (23.16)	25 (34.40)	574.96
Kordestan	204 (222.97)	24 (53.33)	259	0.79 (124.56)	216 (200)	990 (227.72)	22 (250)	0.12 (63.33)	76 (104.59)	1246.5
Gonabad	71 (77.70)	9 (20)	73	0.97 (153.81)	8 (7.41)	128 (39.44)	7 (79.55)	0.16 (58.56)	15 (20.64)	474.1
Neyshabour	26 (29.05)	8 (17.78)	56	0.46 (73.42)	6 (5.56)	60 (13.80)	3 (34.09)	0.27 (150)	8 (11.01)	334.71
Yasouj	77 (83.45)	17 (37.78)	145	0.53 (83.98)	30 (27.78)	305 (70.84)	5 (79.55)	0.17 (91.67)	11 (33.03)	466.76

Conflict of Interest Disclosures

The authors have no conflicts of interest.

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References

1. Peykari N, Djalalinia S, Owlia P, Habibi E, Falahat K, Ghanei M, et al. Health research system evaluation in I.R. of Iran. *Arch Iran Med.* 2012;15(7):394-9.
2. Djalalinia S, Owlia P, Forouzan AS, Habibi E, Dejman M, Eftekhari MB, et al. Health research evaluation and its role on knowledge production. *Iran J Public Health.* 2012;41(2):39-46.
3. Djalalinia S, Peykari N, Owlia P, Eftekhari MB, Habibi E, Falahat K, et al. The analysis of health research system evaluation in medical sciences universities. *Iran J Public Health.* 2013;42(Supple1):60-5.
4. Malekafzali H, Baradaran Eftekhari M, Peykari N, Gholami FS, Djalalinia Sh, Owlia P, et al. Research Assessment of Iranian Medical Universities, an experience from a developing country. *Iran J Public Health.* 2009;38(1):47-49.
5. Jian-Zhong F. Review and analysis of the Times Higher Education-QS World University Rankings. *High Edu.* 2009; 6: 16.
6. Liu NC. The story of academic ranking of world universities. *Int High Edu.* 2015;(54):2-3.
7. Aminpour F, Kabiri P. Science production in Iran: The scenario of Iranian medical journals. *J Res Med Sci.* 2009;14(5):313-22.
8. Hanney SR, Gonzalez-Block MA, Buxton MJ, Kogan M. The utilisation of health research in policy-making: concepts, examples and methods of assessment. *Health Res Policy Syst.* 2003;1(1):2-29. doi: 10.1186/1478-4505-1-2.
9. Lavis JN, Posada FB, Haines A, Osei E. Use of research to

- inform public policymaking. *Lancet*. 2004;364(9445):1615-21. doi: 10.1016/s0140-6736(04)17317-0.
10. Pang T, Sadana R, Hanney S, Bhutta ZA, Hyder AA, Simon J. Knowledge for better health: a conceptual framework and foundation for health research systems. *Bull World Health Organ*. 2003;81(11):815-20.
 11. Djalalinia S, Peykari N, Eftekhari MB, Sobhani Z, Laali R, Qorbani OA, et al. Contribution of Health Researches in National Knowledge Production: A Scientometrics Study on 15-Year Research Products of Iran. *Int J Prev Med*. 2017;8:27. doi: 10.4103/ijpvm.IJPVM_362_16.
 12. Felicetti VL, Morosini MC. Competencies for training knowledge producers: possibilities through international cooperation. *J Int Soc Teach Educ*. 2014;18(1):96-106.
 13. Bolling M, Eriksson Y. Collaboration with society: The future role of universities? Identifying challenges for evaluation. *Res Eval*. 2016;25(2):209-18. doi: 10.1093/reseval/rvv043.
 14. Chinchilla-Rodriguez Z, Zacca-Gonzalez G, Vargas-Quesada B, Moya-Anegon F. Latin American scientific output in Public Health: combined analysis using bibliometric, socioeconomic and health indicators. *Scientometrics*. 2015;102(1):609-28. doi: 10.1007/s11192-014-1349-9.
 15. Yudin A, Brimble M, Kanai M, Liu L, Clayden J, Davis A, et al. Rapid publication of high quality organic chemistry research. *Org Biomol Chem*. 2017;23: 4925-4932.
 16. Falahat K, Eftekhari M, Habibi E, Djalalinia S, Peykari N, Owlia P, et al. Trend of knowledge production of research centers in the field of medical sciences in Iran. *Iran J Public Health*. 2013;42(Suppl 1):55-9.
 17. Owlia P, Eftekhari MB, Forouzan AS, Bahreini F, Farahani M, Ghanei M. Health research priority setting in Iran: Introduction to a bottom up approach. *J Res Med Sci*. 2011;16(5):691-8.
 18. Djalalinia S, Tehrani FR, Afzali HM, Peykari N, Eftekhari MB. Community mobilization for youth health promotion: a lesson learned from Iran. *Iran J Public Health*. 2012;41(4):55-62.

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