RESEARCH ARTICLE

Knowledge Production Status of Iranian Researchers in the Gastric Cancer Area: Based on the Medline Database

Morteza Ghojazadeh[1], Mohammad Naghavi-Behzad[2], Raheleh Nasrolah-Zadeh[2], Parvaneh Bayat-Khajeh[2], Reza Piri[2], Keyvan Mirnia[3], Saber Azami-Aghdash[4]*

Abstract

<u>Background</u>: Scientometrics is a useful method for management of financial and human resources and has been applied many times in medical sciences during recent years. The aim of this study was to investigate the status of science production by Iranian scientists in the gastric cancer field based on the Medline database. <u>Materials and Methods</u>: In this descriptive-cross sectional study Iranian science production concerning gastric cancer during 2000-2011 was investigated based on Medline. After two stages of searching, 121 articles were found, then we reviewed publication date, authors names, journal title, impact factor (IF), and cooperation coefficient between researchers. SPSS.19 was used for statistical analysis. <u>Results</u>: There was a significant increase in published articles about gastric cancer by Iranian researchers in Medline database during 2006-2011. Mean cooperation coefficient between researchers was 6.14±3.29 person per article. Articles of this field were published in 19 countries and 56 journals. Those basex in Thailand, England, and America had the most published Iranian articles. Tehran University of Medical Sciences and Mohammadreza Zali had the most outstanding role in publishing scientific articles. <u>Conclusions</u>: According to results of this study, improving cooperation of researchers in conducting research and scientometric studies about other fields may have an important role in increasing both quality and quantity of published studies.

Keywords: Scientometric approach - gastric cancer - Medline database - Iran

Introduction

Nowadays research is regarded as one of the most important means of growth and development. Objective-based and well-planned researches prevent repetitive studies and resource waste, also they satisfy society's needs. If these studies lead to scientific knowledge production then can be regarded as index of society development (Tajima et al., 2000; Sharifi et al., 2004; Dursun et al., 2011). Quantitative evaluation of scientific productions helps authorities to use human and financial resources efficiently so less costs is needed and more outcome is resulted and economical-social structures of the country are preserved (Sharifi et al., 2004; Ghojazadeh et al., 2013; Rostamizadeh et al., 2013). For this purpose, different methods have been used during recent years. Scientometric studies, as one of these methods, has been found to be an appropriate tool for quantitative evaluation and analysis of scientific activities and their efficiency through counting scientific productions in different fields (Biglu, 2008). Scientometrics objects of assessing the most modern progresses of research, scientific activities

and growth factors in every scientific field. Scientometrics may be an efficient and useful element for authorities and planners to manage human and financial resources more efficiently. Scientometrics explains science production process and efficiency of scientific researches (Osareh and Marefat 2006). Medical sciences and other related fields has attracted more attentions during recent years and more scientometric studies have been conducted in this regard in Iran (Malekzadeh et al., 2001; Foroughi and Kharazi 2006; Alijani and Karami 2010; Amirnia et al., 2012; Fakhrjou et al., 2013; Karami et al., 2013). Considering medical sciences, chronic diseases especially cancers have special importance because they are regarded as the main cause of mortality which follows cardiac diseases as main cause of mortality (Murray and Lopez 1997). Generally, about two third of cancers occur in the developing countries, where only 5% of cancer-controlling tools are available. Gastric cancer is one of the most prevalent cancers constituting about 10% of cancers all over the world. It is one of the most prevalent cancers and more than 870,000 new cases are globally reported every year. Also, more than 650,000 deaths are annually reported which is causes by this cancer

[1]Liver and Gastrointestinal Disease Research Center, [2]Students' Research Committee, [3]Department of Neonatology, Tabriz University of Medical Sciences, [4]Health Management and Economics Research Center, Iran University of Medical Sciences, Tehran, Iran *For correspondence: saberazami@yahoo.com

all over the world (Parkin, 1998). In Iran, northern regions especially Azerbaijan provinces; central and western regions; and southern regions has high, moderate, and low gastric cancer prevalence, respectively (Schulz et al., 1994; Hamajima et al., 2001; Sadjadi et al., 2003; He et al., 2011; Ghojazadeh et al., 2012). In contrary to Japan, western European, and northern American countries, prevalence of gastric cancer has increased in Iran within the last 30 years and reached its threshold at Azerbaijan area especially Ardebil province (Moher and Jones 2001; Redmond and Colton 2001; Altman et al., 2003; Ghojazadeh et al., 2012; Mohammadzadeh et al., 2013). Unfortunately gastric cancer and its consequences not only affect patient's lifer style but also decrees life style of life of patient's family members. Since achieving notable rank in science and technology in local region is Iranians land scape within 20 years, researches should inform authorities about research status in science and technology. According to mentioned facts, in this study, it was tried to study Iran's rank in producing scientific knowledge about gastric cancer at Medline website, identify journals that published articles of Iranian researchers about gastric cancer, and identify the most active research centers and top researchers in this regard. Evidently, analyzing the related identified documents may visualize Iran's research status in this regard. Also, identifying the strength and weak points may be helpful in modifying future research policies which may lead to fill the gaps and alleviate weak points. So long term continuous evaluations and using results of these evaluations may promote and develop Iran's science status.

Materials and Methods

This cross-sectional and analytical study evaluated Iran's knowledge production status about gastric cancer during the years 2000-2011. Medline database was selected to conduct the study since it is the most available and applied biomedical website (Osareh and Marefat 2006). Medline is the first and most important database of the United States National Library of Medicine which is consisted of more than 18 million bibliography data and abstracts of articles published in 5400 bio scientific journals especially biomedical ones. Indexing of the records as head title of Mesh Medical Topic is the unique characteristic of Medline (Moher et al., 2002). To conduct this study, data were extracted using PubMed from national center of biotechnological database also it was limited to Medline. The data were searched at two stages in order to generalize and assure that all documents are recovered. During the first stage, keywords related to gastric cancer were specified as gastric neoplasm using Medline database lexicon. To specify the search results at the first stage, then, gastric neoplasm was applied along with [majr] label indicating the Mesh Major Topic. The label leads to discuss on recovered documents about gastric cancer and serves as main point of article about gastric neoplasm. Therefore, search strategy for the first stage can be summarized as follows:
Medline [sb] and "gastric neoplasm" [majr] and Iran [ad] and 2000-2011 [dp] [ad] and [sb] labels were used to limit

author's address and database to Medline, respectively. The first stage resulted in finding 95 articles. To generalize outcomes resulted from recovery of scientific productions about gastric cancer, the second stage was started with searching eight keywords including gastric neoplasm, gastric cancer, gastric adenocarcinoma, gastric carcinoma, gastric neoplasm, gastric cancer, gastric adenocarcinoma, and gastric carcinoma specified by the subjective specialist (gastrology subspecialist). In this stage, [all] label was used, i.e. where the keyword was found and the document was appeared in results. Boolean NOT operator was used to exclude those articles recovered at the first stage and then, remaining documents were recovered. Similar to the first stage, the articles belonged to years 2000-2011 period and they were limited to Medline database. The method recovered 73 articles. Studied by the subjective specialist, 47 unrelated documents were excluded and 26 documents were identified as related ones. Considering both stages, 121 documents were collected. Finally, impact factor of the journals that published 121 mentioned articles were recovered at Journal Citation Reports (JCR). To analyze the data, they were recorded in the prepared Excel file including parameters of Medline identification database (PMID), date of publication (DP), organizational affiliation of the document (AD), authors (AU), publication location of the journal (PL), journal title (JT), and impact factor (IF). Also, count of authors as well as mean number of authors for each article was calculated for each year. Available components are labels related to every record at Medline database. This stage was done manually. Then, the data required to answer questions of the research were extracted and were analyzed using SPSS17. Consort Figure of study is shown in Figure 1.

Results

Iran has published 121 documents about gastric cancer from 2000 to 2011. The documents have been produced after 2001 and Iran had not any scientific production about gastric cancer at Medline database in 2000. It has reached from one article in 2001 to 30 in 2011 (from 0.8% to 24.8%). Figure2 refers to production process of these documents within different years. During this study, 743 Iranian researchers contributed in production of 121 articles such that 1-20 researchers were involved in writing these articles. Mean cooperation among Iranian
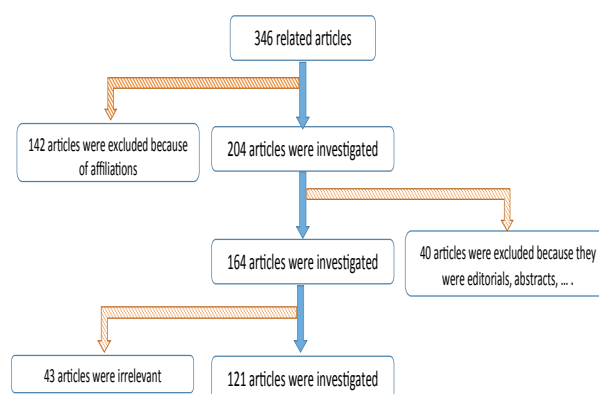

Figure 1. Consort Diagram of Study

researchers (number of authors) in producing information about gastric cancer is shown in Figure 3. According to the results, mean contribution in writing articles among Iranian researchers is 6.14±3.29 for every article. A list of researchers contributed in production of at least 6 documents during 2000-2011 is presented in Table 1. According to the Table, Mohammadreza Zali and Reza Malekzadeh contributed in production of about 39% of documents. They are regarded as active researchers about gastric cancer. Evaluating publication location of Iranian articles about gastric cancer indexed at Medline database, made it clear that Iranian knowledge productions have been published in journals of 19 countries. The list is presented in Table 2. According to Table 2, Shahid Beheshti University of Tehran, Tehran university of Medical Sciences, Mashhad University of Medical Sciences, and Shiraz University of Medical Sciences are the most active centers in producing articles on gastric cancer.
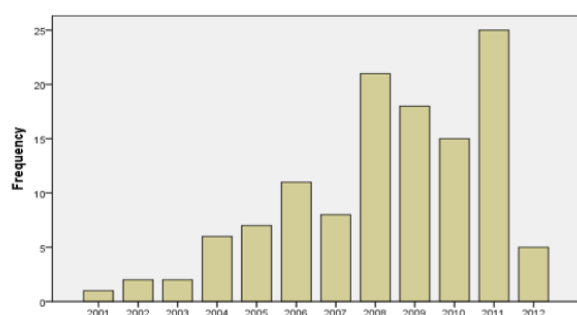
Published articles status about gastric cancer categorized by topics in Iran in 2000-2011 are shown in Figure 4; Studies about histology and molecular-genetics studies were the most performed studies.

Iranian researchers have published their scientific productions in 56 journals including Asian Pacific Journal of Cancer Prevention: APJCP (ASIAN PAC J CANCER P) with impact factor of "1.27" belonging to Thailand published 21.5% of Iranian articles. Also, Archives of Iranian Medicine (ARCH IRAN MED) with impact factor of 97% belonging to Iran and World Journal of Gastroenterology with the impact factor of 2.47 from China has published 7.4% of articles written by Iranian authors. About 0.8% of articles of Iranian authors have been published in GUT journal of England with the highest impact factor (10.732). Table 3 demonstrates journals with highest impact factor (>3).

Figure 2. Growth Process of Iranian Scientific Productions about Gastric Cancer at Medline Database, 2000-2011

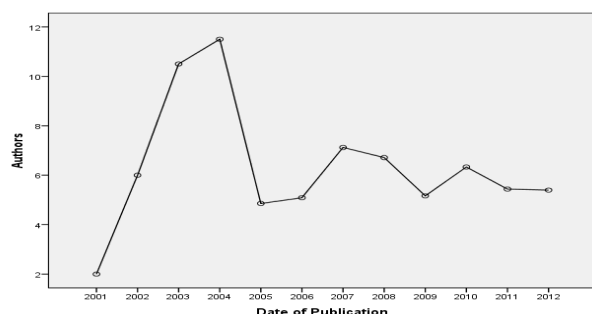**Figure 3. Mean Cooperation among Iranian Researchers (number of authors) in Producing Information about Gastric Cancer**

Table 2. Publication Location of Journals Published Iran Scientific Productions indexed about Gastric Cancer at Medline Database During 2000-2011

Country	Frequency of Publication Locations of Journals	
	Number	Percentage
Thailand	26	21.5
England	21	17.4
America	15	12.4
Iran	12	9.9
China	9	7.4
India	8	6.6
Netherland	7	5.8
Germany	3	2.5
Switzerland	3	2.5
Pakistan	3	2.5
Australia	3	1.7
Japan	2	1.7
Italy	2	1.7
Tanzania	2	1.7
Saudi Arabia	2	1.7
Turkey	1	0.8
Ireland	1	0.8
Egypt	1	0.8
Canada	1	0.8
Total	121	100

Table 1. Iranian Researchers Contributed in Producing 6 Documents about Gastric Cancer at Medline Database During 2000-2011

Researcher	University/institute	Center	No. articles
Zali, Mohammadreza	Shahid Beheshti University of Medical Sciences	Digestive and liver diseases research center	19
Malekzadeh, Reza	Tehran University of Medical Sciences	Digestive and liver diseases research center of Dr. Shariati hospital	18
Safaei, Azadeh	Shahid Beheshti University of Medical Sciences	Digestive and liver research center	12
Moghimi Dehkordi, Bijan	Shahid Beheshti University of Medical Sciences	Digestive and liver research center	11
Mohagheghi, Mohammadali	Tehran University of Medical Sciences	Cancer research center	11
Aminpour Hosseingholi, Mohammad	Shahid Beheshti University of Medical Sciences	Digestive and liver diseases research center	8
Derakhshan, Mohammadhossein	Tehran University of Medical Sciences	Digestive and liver research center	8
Yazdanbod, Abbas	Ardebil University of Medical Sciences	Internal medicine department	8
Hajizadeh, Ebrahim	Tarbiat Modarres University, School of Medical Sciences	Biological statistics department	7
Nouraei, Mohammad	Tehran University of Medical Sciences	Digestive and liver diseases research center of Dr. Shariati hospital	7
Zeraati, Hojjat	Tarbiat Modarres University, School of Medical Sciences	Biological statistics department	6
Babaei, Mahdi	Semnan University, School of Medical Sciences, fatemieh hospital	Digestive and liver research center	6
Fatemi, Seyed Reza	Shahid Beheshti University of Medical Sciences	Digestive and liver diseases research center	6
Sotoudeh, Masoud	Iran University of Medical sciences and Health & Treatment services	Digestive and liver diseases research center	6
Sajjadi, Alireza	Tehran University of Medical Sciences	Digestive research center	6

Table 3. Journals with the Highest Impact Factor Publishing Iranian Articles indexed about Gastric Cancer at Medline Database During 2000-2011 (Along with Number of Iranian Published Articles)

Journal	Country	Number	Impact factor
GUT	England	1	10.111
Annals of Oncology (ANN ONCOL)	England	2	6.425
Clinical gastroenterology and hepatology: the official clinical practice journal of the American Gastroenterological Association	America	1	5.627
International Journal of Cancer (INT J CANCER)	America	3	5.444
Human Genetics (HUM GENET)	Germany	1	5.069
British Journal of Cancer (Br J Canc)	England	1	5.042
CANCER LETTERS (Cancer Lett.)	Ireland	1	4.238
International journal of medical microbiology :IJMM (Int J Med Microbiol)	Germany	1	4.173
JOURNAL OF CLINICAL MICROBIOLOGY) J CLIN MICROBIOL	America	1	4.153
CANCER SCIENCE (Cancer Sci.)	England	1	3.325
BMC Cancer	England	4	3.011
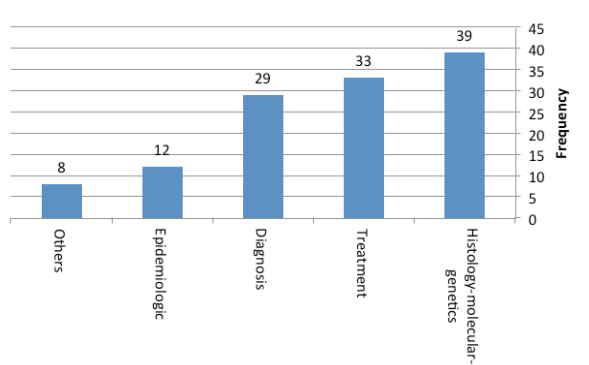
Figure 4. Published Articles Status about Gastric Cancer Categorized by Topics in Iran in 2000-2011(N=121)

Discussion

Results of the present study indicates that published articles about gastric cancer by Iranian researchers at Medline database during years 2001-2011. Mean contribution for writing articles among Iranian researchers is 6.14±3.29 for each article. Iran's knowledge productions about gastric cancer have been published in 56 journals of 19 countries. Thailand, England, and America have the highest rate of frequency in publishing Iranian articles. Tehran University of Medical Sciences and Mohammadreza Zali have the highest rate of contribution in publishing scientific articles about gastric cancer.

According to the results, publication process of Iranian articles has significantly increased within recent years (However, it should be mentioned that few articles of 2012 may be attributed to the fact that those articles submitted and accepted in 2012 could not be traced by the present study due to delay of some journals in indexing the articles at Medline database). In this regard, Biglu et al (Biglu 2008) indicated to significant growth rate in publishing Iranian articles about breast cancer since 2000. This increment was accelerated within the last two years, i.e. 2007 and 2008. The findings are in correspondence with results of the present study. Evaluating publication process of Indian articles in Canada and America indicated quicker publication process of Indian researchers' articles in these two countries and cooperation factor between Indian, American and Canadian researchers

(Basu et al.,). Considering studies conducted on thyroid cancer, researchers demonstrated that the highest rate of publications has been evaluated within two last years (2006 & 2007) and America was the highly contributed country in this field (Raja et al., 2011). Considering scientometric evaluations of articles published about AIDS, Mardani et al. (2011) indicated to rapid publication growth of articles about AIDS during recent years such that it was really considerable from 2008 to 2010. Evaluating articles of Iran Pastor Institute within the last 36 years from scientometric point of view, Bazrafshan and Mostafavi suggested that the most articles were produced in 2008 and ever-increasing publication process of articles of the center was really significant during years 2005-2009. In another study, Sharifi et al. (Sharifi et al. 2004) demonstrated that publication process of articles about Iran mental health experienced ascending increase since 2001. Additionally, evaluating publication process of papers about stem cells made ascending increase of the process clear during recent years. According to the studies, it can be concluded that general process of research and publication of medical articles in Iran has significantly increased during recent years especially since 2000 and encountered kind of mutation. It might be attributed to endeavor of researchers, special focus of government on research, technological advancement, availability of more databases, and establishment and development of research centers all over the country during recent years. Considering supportive policies of the government and universities of medical sciences for research and researcher, it is expected that the ever-increasing process will continue its quick growth in future.

In this study, mean contribution in writing articles among Iranian researchers is 6.14±3.29 for every article while it was respectively 4.67 and 2.4 in the studies conducted by Beiglu and Sharifi (Biglu, 2008), which indicates high cooperation mean of researchers about gastric cancer. Studies conducted by Osareh et al. (2006) and Asnafi et al [22] indicated raise of cooperation process among Iranian researchers during recent years. Although the study referred to high cooperation rate among researchers during years 2002-04, it has significantly decreased within the next years. Considering that researchers' cooperation may lead to more qualitative

and quantitative articles, it seems necessary to provide appropriate conditions and enculturate teamwork in order to qualitatively and quantitatively promote the articles.

The present study introduced Tehran University of Medical Sciences and Shahid Beheshti University as the most active centers regarding production of scientific knowledge about gastric cancer. The results are in correspondence with findings of the studies conducted by Mardani et al. (2011) on scientometric study about AIDS, Shargh et al. (2011) on scientometric study about Iran nerves science, and Ebrahimi and Jokar, (2010) about scientific publications' status of Iranian universities of medical sciences. Apparently, with increasing number of academic members and researchers of Tehran university of Medical Sciences and Shahid Beheshti University scientific publication will. As a result, there are 5 researchers from Tehran University of Medical Sciences and 5 from Shahid Beheshti University among 15 active researchers. Accordingly, it can be concluded that concentration of budget and facilities in capital provide better conditions for knowledge production in these centers and vice versa, i.e. lack of type II universities among active centers in producing scientific information may be attributed to their insufficient budget, facilities, and academic members. Therefore, it seems necessary to fairly distribute the resources and provide more proper access of researches from universities of small cities to research facilities in order to promote ever-increasing process of scientific productions and provide required conditions to equal attendance of all universities and researchers of the country.

According to reports, 21.5% of Iranian science productions have been published in journals of Thailand. Also, England and America have respectively published about 17.4% and 12.4% of Iranian science productions. The results correspond with that of Osareh and Marefat (Osareh and Marefat 2006), Haiati and Didgah (Hayati and Didegah 2010), and Biglu (Biglu, 2008).

According to the results of present study, the least amount studies in gastric cancer field were about management sciences, psychology and sociology. As far as these studies have an important role in diagnosis (establishing screening programs), treatment (patient's responsibility to follow the treatment plan) and providing better service for patients (enhancing quality of services with management methods), designing such studies may have an outstanding effect in management and treatment gastric cancer. Also more epidemiologic studies are needed, because there is a high incidence of gastric cancer in Iran but no thorough epidemiologic study exists.

Availability of address of only the first author at Medline database is regarded as one of the most important limitations of the present study. Therefore, it was not possible to recognize field and specialty of other authors and it cannot be stated that how many authors contributed in writing one article.

In conclusion, results of the study suggest that publication process of articles about gastric cancer by Iranian researchers has significantly increased. So it seems necessary to focus on enhancement of researchers' cooperation, providing sufficient and appropriate research facilities for researchers of type II and III universities as well as proper conditions for participation of academic members and students of the mentioned universities. Considering Iran's policies to achieve top scientific rank in the region to 2025, it is suggested that scientometric studies would be conducted at other fields and effective planning would be made to qualitatively and quantitatively enhance our studies through comparing strength and weak points as well as Iran's status with that of other countries in the region.

References

Alijani R, Karami N (2010). A review of scientific publications by iranian researchers on stem cells in the ISI database. *Yakhteh Medical Journal*, **11**, 456-8.

Altman D, Schulz K, Moher D (2003). The consort statement: revised recommendations for improving the quality of reports of parallel group randomised trial. *Clin Oral Investig*, **7**, 2-7.

Amirnia M, Babaie-Ghazani A, Fakhrjou A, et al (2012). Immunohistochemical study of cyclooxygenase-2 in skin tumors. *J Dermatolog Treat*, **25**, 380-7.

Basu A, Roe P, Lewison G, (2012). The Indian Diaspora in Cancer Research: A Bibliometric Assessment for Canada and the USA. 110-20.

Biglu MH (2008). Scientometric study of patent literature in medicine. Fourth International Conference on Webometrics, Informetrics and Scientometrics & Ninth COLLNET Meeting. Humboldt-Universit.t zu Berlin, Institute for Library and Information Science (IBI).

Dursun P, Gultekin M, Ayhan A (2011). World gynecologic oncology publications and the Turkish contribution to the literature between 2000 and 2007. *Asian Pac J Cancer Prev*, **12**, 861-4.

Ebrahimi S, Jowkar A (2010). The situation of scientific publications of iran's universities of medical science on the basis of scientometrics qualitative and quantitative indicators 1997-2006. *Health Information Management*, **7**, 270-82.

Fakhrjou A, Dastranj-Tabrizi A, Ghojazadeh M, et al (2013). Diagnostic value of protein Ki67 (MIB-1) in atypical Pap smears of postmenopausal women. *Asian Pac J Cancer Prev*, **14**, 4815-8.

Foroughi F ,Kharazi H (2006). Study of scientific information production of kermanshah medical university's faculties. *Iranian J Med Educ*, **5**, 181-7.

Ghojazadeh M, Azar ZF, Saleh P, et al (2012). Knowledge and attitude of Iranian university students toward human papilloma virus. *Asian Pac J Cancer Prev*, **13**, 6115-9.

Ghojazadeh M, Mohammadi M, Azami-Aghdash S, et al (2013). Estimation of cancer cases using capture-recapture method in Northwest Iran. *Asian Pac J Cancer Prev*, **14**, 3237-41.

Ghojazadeh M, Naghavi-Behzad M, Fardi Azar Z, et al (2012). Parental knowledge and attitudes about human papilloma virus in Iran. *Asian Pac J Cancer Prev*, **13**, 6169-73.

Hamajima N, Matsuo K, Saito T, et al (2001). Gene-environment interactions and polymorphism studies of cancer risk in the hospital-based epidemiologic research program at aichi cancer center II (HERPACC-II). *Asian Pac J Cancer Prev*, **2**, 99-107.

Hayati Z ,Didegah F (2010). International scientific collaboration among Iranian researchers during 1998- 2007. *Library Hi Tech*, **28**, 433-46.

He J, Du L, Liu G, et al (2011). Quality assessment of reporting of randomization, allocation concealment, and blinding in traditional chinese medicine RCTs: A review of 3159 RCTs

identified from 260 systematic reviews. *Trials*, **12**, 1-9.

Karami H, Baradaran B, Esfahani A, et al (2013). siRNA-mediated silencing of survivin inhibits proliferation and enhances etoposide chemosensitivity in acute myeloid leukemia cells. *Asian Pac J Cancer Prev*, **14**, 7719-24.

Malekzadeh R, Mokri A ,Azarmina P (2001). Medical science and research in Iran. *Arch Iranian Medicine*, **4**, 27-39.

Mardani AH, Mardani A, Sharif Moghadam H (2011). A survey of knowledge production of iranian researchers on AIDS:Evidence from the web of science database. *J Health Admin*, **14**, 1-7.

Mohammadzadeh M, Pourzand A, Eftekhar-Sadat AT, et al (2013). A case of concurrent several forms of thyroid cancer. *Niger Med J*, **54**, 351-3.

Moher D, Sampson M, Campbell K, et al (2002). Assessing the quality of reports of randomized trials in pediatric complementary and alternative medicine. *BMC Pediatrics*, **2**, 1-6.

Moher D, Jones A (2001). Lepage CONSORT Group (Consolidated Standards for Reporting of Trials). Use of the CONSORT statement and quality of reports of randomized trials: a comparative before-andafter evaluation. *J Am Med Assoc*, **285**, 1992-5.

Murray C, Lopez A (1997). Global mortality,disability, and the contribution of risk factors:Global Burden of Disease Study. *Lancet*, **349**, 1436-42.

Osareh F, Marefat R (2006). Cooperation of iranian researchers in medline database. *Rahyaft*, **35**, 40-4 (in Persian).

Parkin D (1998). Epidemiology of cancer: global patterns and trends. *Toxicol Lett*, **227**, 102-3.

Raja S, Ramkumar P ,Viji P (2011). Scientometric dimension on gender in worldwide thyroid cancer: A study based on web of science database. *Indian J Science Technol*, **4**, 425-8.

Redmond C ,Colton T (2001). Biostatistics in Clinical Trials. New York, John Wiley.

Rostamizadeh L, Fakhrjou A, Montazeri V, et al (2013). Bcl-2 gene expression in human breast cancers in Iran. *Asian Pac J Cancer Prev*, **14**, 4209-14.

Sadjadi A, Malekzadeh R, Derakhshan M, et al (2003). Cancer occurrence in Ardabil: results of a population-based cancer registry from Iran. *Int J Cancer*, **107**, 113-8.

Schulz K, Chalmers I, Grimes DA, et al (1994). Assessing the quality of randomization from reports of controlled trials published in obstetrics and gynecology journals, *JAMA*, **272**, 125-8.

Shargh A, Mohammadhassanzadeh H, Johari K, et al (2011). The study of the presence of Iranian neuroscience in ISI database based on scientometric factors. *J Health Admin*, **14**, 1-10.

Sharifi V (2004). Scientometrics and congnitive sciences. *Advances in Cognitive Science*, **5**, 89-91.

Sharifi V, Rahimi Movaghar A, Mohammadi M, et al (2004). Iranians' three decades of research in mental health: a scientometric study. *Advances Cognitive Science*, **5**, 1-16.

Tajima K, Hirose K, Inoue M, et al (2000). A model of practical cancer prevention for out-patients visiting a hospital: the Hospital-based Epidemiologic Research Program at Aichi Cancer Center (HERPACC). *Asian Pac J Cancer Prev*, **1**, 35-47.