

Are we aware of the importance of the cardiac rehabilitation?

Gülay Özkeçeci, Selma Eroğlu, Ersel Onrat, Alaettin Avcı, Serkan Berkur, Özlem Solak**

Departments of Cardiology, *Physical Therapy and Rehabilitation, Faculty of Medicine, Afyon Kocatepe University; Afyonkarahisar-Turkey

Cardiovascular diseases are worldwide number one cause of mortality and morbidity (1). The main reason of the decrease in mortality due to coronary artery disease is not just the advances in treatment of the acute coronary syndromes, but also the advances in the secondary prevention methods. Cardiac rehabilitation programs are secondary prevention methods for the treatment of cardiovascular diseases (2). Cardiac rehabilitation is a comprehensive and long term program that aims to keep the physical, physiologic, psychologic, social and working capacities of cardiologic patients at high levels and consists of personal exercises under supervision, medical evaluation, and evaluation of risk profiles, education, medical counseling and modification of coronary artery disease by pharmacologic and non-pharmacologic approaches (3-5).

The cardiac rehabilitation first came into question in 1970s and it was only applied after myocardial infarction (MI). After the benefits and reliabilities have been proved the indications have been extended, and today widely used in most cardiovascular diseases (cardiomyopathy, hearth valve replacement, pace-maker, cardiac transplant, heart failure, metabolic syndrome, diabetes mellitus) (6).

Even though the previous studies showed that cardiac rehabilitation lowers the risk of mortality, only 20% patients in USA (the most widely used country) are taking the cardiac rehabilitation programs (7).

This article aims to review the scientific researches about cardiac rehabilitation in Turkey and all in the world to demonstrate their number and distribution in journals by years and through that to evaluate the researches in our country.

We evaluated the publications of the journals in science citation index (SCI) and science citation index expanded (SCI-E) about cardiac rehabilitation. For this purpose, we used Thomson Reuters Web of Knowledge-Web of Science software. 'Cardiac

rehabilitation' and '2003-2013' were the key words which were entered for the topic and years published section (31/10/2013).

We also evaluated the abstracts of the scientific publications that researchers from our country take part. There are 3889 scientific publications about cardiac rehabilitation all in the world between the years 2003-2013. The distribution of the publications by country is listed in Table 1.

Among all the publications about cardiac rehabilitation the USA is number one with 28% and our country ranked 28th with a percentage of 0.74. 2632 (67.7%) of those publications are article, 620 (15.9%) of those are meeting summary, 316 (8.1%) of those are review.

Among all the scientific publications that researchers from our country take part 72% of them are article and 6.8% of them are review.

Since 2003 there is a rise in the number of the researches all in the world. In our country maximum number (seven scientific publications) of publications are added to world literature in 2007. The distribution of the publications by years in all over the world and in Turkey is demonstrated in Figure 1 and 2.

The list of the first 10 journals of SCI and SCI-E that has published articles about cardiac rehabilitation is outlined in Table 2. The Anadolu Kardiyoloji Dergisi (Anatolian Cardiology Journal) is in the first place among the journals that accepts the manuscripts of Turkish researchers with 5 articles (17.2%) and Clinical Research in Cardiology is in the second place with 2 articles (6.8%). The Anatolian Cardiology Journal is mostly preferred as a SCI-E journal.

Among all the publications in Turkey the cardiology and cardiovascular diseases departments take the first place.

Overall the number of the articles about cardiac rehabilitation in our country has a lower percentage in the world due to the higher costs and the unawareness of the physicians about cardiac rehabilitation programs. These results demonstrate the

Address for Correspondence: Dr. Gülay Özkeçeci, Afyon Kocatepe Üniversitesi Tıp Fakültesi, Ahmet Necdet Sezer Araştırma ve Uygulama Hastanesi, İzmir Karayolu 7. Km 03200 Afyonkarahisar-Türkiye
Phone: +90 505 298 23 77 Fax: +90 272 246 25 27 E-mail: gulayozkececi@yahoo.com

Accepted Date: 08.01.2014 **Available Online Date:** 02.05.2014

© Copyright 2014 by Turkish Society of Cardiology - Available online at www.anakarder.com
DOI:10.5152/akd.2014.5357



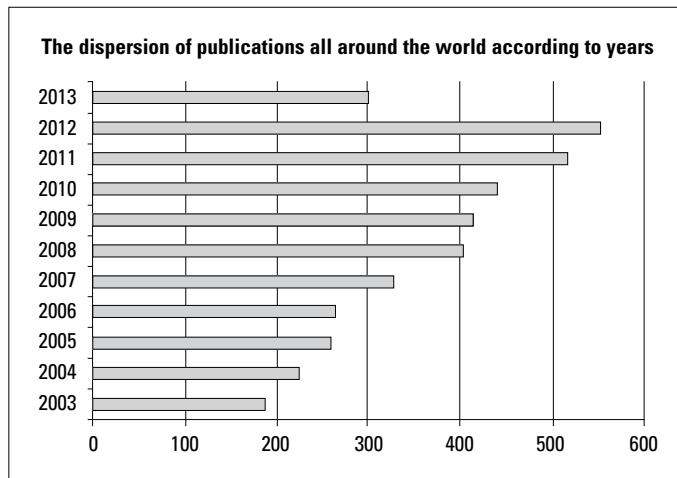


Figure 1. The dispersion of publications all around the world according to years

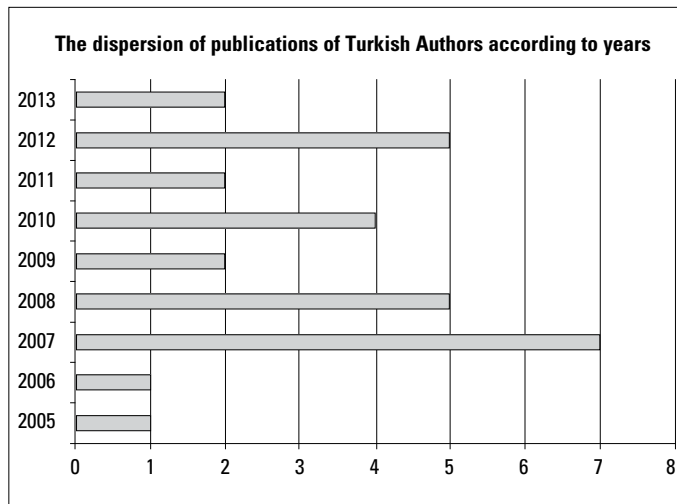


Figure 2. The dispersion of publications of Turkish Authors according to years

Table 2. The list of the journals that has publications of the researchers all in the world (first 10 journals)

Journal	Publications (n=3889) (%)
Circulation	196 (5.1%)
Journal of Cardiopulmonary Rehabilitation and Prevention	176 (4.5%)
European Heart Journal	137 (3.5%)
European Journal of Cardiovascular Prevention Rehabilitation	126 (3.2%)
International Journal of Cardiology	76 (1.9%)
Medicine and Science in Sports and Exercise	76 (1.9%)
Heart	73 (1.8%)
Journal of The American Collage of Cardiology	72 (1.8%)
Canadian Journal of Cardiology	65 (1.6%)
Archieves of Pyhsical Medicine and Rehabilitation	62 (1.5%)

Table 1. The distribution of the publications all in the world about cardiac rehabilitation by country (first 30 countries)

Countries	Number of publications (n=3889) (%)
USA	1116 (28.6%)
Canada	442 (11.3%)
England	360 (9.2%)
Germany	316 (8.1%)
Australia	264 (6.7%)
Italy	249 (6.4%)
France	142 (3.6%)
Netherlands	139 (3.5%)
Japan	128 (3.2%)
Poland	112 (2.8%)
Switzerland	105 (2.7%)
Sweden	92 (2.3%)
Belgium	91 (2.3%)
Brazil	81 (2.1%)
Scotland	74 (1.9%)
Norvey	65 (1.6%)
Spain	62 (1.5%)
Peoples R China	59 (1.5%)
Denmark	52 (1.3%)
Austria	50 (1.3%)
Portugal	42 (1%)
Ireland	40 (1%)
Taiwan	39 (1%)
Iran	37 (0.9%)
Greece	34 (0.87%)
Israil	34 (0.87%)
New Zealand	30 (0.77%)
Turkey	29 (0.74%)
Wallis	28 (0.72%)
Russia	24 (0.61%)

limited number of publications from our country. Therefore assemblies of societies in many countries should focus on training and assessment of competence of physicians about cardiac rehabilitation. Courses aiming to develop skills and knowledge and hands-on training in the field of cardiac rehabilitation are needed to implement cardiac rehabilitation in physicians' daily practice. We believe that this analysis and contribution of physicians to the literature are essential in developing and improving future plans of our society regarding cardiac rehabilitation.

Conflict of interest: None declared.

Peer-review: Externally peer-reviewed.

Authorship contributions: Concept - G.Ö., S.E.; Design - G.Ö.; Supervision - A.A., E.O., Ö.S.; Resource - G.Ö., S.E.; Data collection&/or processing - S.B., G.Ö., S.E.; Analysis &/or interpretation - G.Ö., S.E.; Literature search - G.Ö., S.E.; Writing - G.Ö., S.E., S.B.; Critical review - E.O., A.A., Ö.S.

References

1. Fox S. Relationship of activity habits to coronary heart disease. Exercise Testing and Exercise Training in Coronary Heart Disease. In: Naughton J, Hellerstein HK, editors. Academic Press. New York: 1973.p. 3-21.
2. Aggarwal A, Ades PA. Exercise rehabilitation of older patients with cardiovascular disease. *Cardiol Clin* 2001; 19: 525-36. [\[CrossRef\]](#)
3. Frontera WR, Dawson MD, Slovik DM, editors. Exercise in Rehabilitation Medicine. Human Kinetics; 1999.
4. Topol JE. Textbook of Cardiovascular Medicine (çeviri: Ülker, T, Yüksel, A, Talay, M.), Dursun, NA, Ed. Lippincott Williams & Wilkins: Düzey Matbaacılık; 2005.
5. Oral A. Kardiyak Rehabilitasyon. In; Diniz F, Ketenci A, editors, Fiziksel Tıp ve Rehabilitasyon. İstanbul: Nobel Tıp Kitapevleri; 2000.p.509-29.
6. Demirsoy N, Taşkiran ÖÖ. Yaşlılarda Kardiyak Rehabilitasyon: Türkiye'ye ve Dünya'ya Genel Bir Bakış. *Turkish Journal of Geriatrics* 2010; özel sayı 2: 125-33.
7. Williams MA, Fleg JL, Ades PA, Chaitman BR, Miller NH, Mohiuddin SM, et al. Secondary prevention of coronary heart disease in the elderly (with emphasis on patients > or =75 years of age). *Circulation* 2002; 105: 1735-43. [\[CrossRef\]](#)