

Publications From Turkey In European & American Neurosurgical Journals - A Review Of The Facts

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Abstract : We analysed the number, type and year of international publications originating from neurosurgical departments in Turkey between the years 1980 and 1990 using online databases in order to be able to compare the figures with the performance of other European neurosurgical societies. We then analysed the citation patterns of those Turkish neurosurgical articles published in citing and cited journals as indexed in the Science Citation Index mainly between 1980-1990. However to commemorate the pioneers of neurosurgery in Turkey, the citation analysis was extended to cover publications from Turkey between the years 1965-1979.

Analysis of the source indexes has shown that the number of articles from Turkey either in European or American neurosurgical journals was ahead of more than half of the European countries. One fourth of all the publications were found to be overcited. Another fact is that more and more papers on experimental and clinical studies started coming out during the last couple of years and with such an increasing performance, the Turkish neurosurgical community will surely find the place it deserves before the end of this decade.

Key Words : Bibliometry, Citation Analysis

INTRODUCTION

The history of neurological surgery in Turkey goes back to as early as 1951. That was when Dr. Berkay returned from USA to set up a neurosurgery department at Istanbul University (1). Then others followed, Drs. Avman and Erbeni went to USA. On their return they established neurosurgical departments at Ankara and Hacettepe Universities respectively. Many other first generation neurosurgeons obtained their training outside Turkey, where they not only participated in every aspect of the clinical activities but also started publishing scientific material. By the end of the 70's, neurosurgical articles from Turkey started appearing in international neurosurgical journals. In 1968 the Turkish Neurosurgical Society was founded in Istanbul (1) and in 1972, became a member of the European Neurosurgical societies and has kept a close relationship since then (3). About the same time the number of neurosurgeons and institutions in Turkey started to increase, It must be the

pride of our seniors that nowadays the third generation of neurosurgeons that they have trained are practicing all over the country with an enthusiasm and energy which is documented by the data giving rise to this article.

A recent article by Trojanowski et al. (4) prepared on behalf of the Research Committee of the European Association of Neurosurgical Societies (EANS) analysed the papers of European neurosurgeons published in both European and American neurosurgical journals. However, to our surprise, Turkey was not included in the analysis. At that time, Professor Erbeni, as the most senior neurosurgeon in Turkey as well as having official responsibility as Foreign Relationships Diplomat of the Turkish Neurosurgical Society, replied to this matter in a timely manner (3). A list of publications appeared as an addendum to his polite letter. In an attempt to update and extend that information, we have reanalysed the databases. We also hope that this article may start a tradition

to keep strict records of the Turkish Neurosurgical Society in a prospective manner and review them every 2-3 years since reviewing an immense number as here has not been easy process.

Finally, it was a recent article on the value of citation analysis of neurosurgical publications that prompted us to do the citation analysis (2). The rationale of citation analysis is that articles which remain influential will be more often cited in the relevant literature than papers in which ideas and concepts become obsolete.

MATERIALS AND METHOD

Data on the number of papers published between the years 1980-1990 were collected using databases MEDLINE (National Library of Medicine, Bethesda, MD, USA) and SCI (Science Citation Index, Institute of Scientific Information, Philadelphia, PA, USA). For citation analysis only SCI could be used as a database but the time interval was increased to encompass the earliest publications (1965-1979). Publications like letters to the editor, obituaries or brief communications were not included but information on neurosurgical training and the status of neurosurgery was included (1). Also excluded were publications authored by Turkish neurosurgeons coming from foreign centres.

The articles listed in SCI are divided into two as citing and cited journals. Briefly, citing journals were those on which the citation analysis of SCI were based. The number of citations was derived from the references of those articles which appeared in citing journals. Cited journals were those which were recorded if they were cited in bibliography of those articles in the citing journals. Thus, any reference added to a given article was not necessarily listed in SCI but those in citing and cited journals. Since older publications would naturally be cited more compared to recent ones, a correction factor was needed. So, the citing patterns were evaluated by using the Impact Factor (IF) of the relevant journals. Basically IF is a average measure of frequency with which an article in a journal has been cited in a particular year. Since the search extended over a long period and considering the fact that the IFs of developing journals were not consistent, an average value was derived from the IF values of the last 6 years. One year was given as the necessary period for the article being distributed worldwide and cited in another article published in an average period of 6-7 months. Only

those papers that achieved a citation performance exceeding average (excepted) performance were underlined. This was done simply by multiplying the IF with the number of years the article was available for citation (1993 minus one minus the publication year) and to compare the product with the actual number of citations.

RESULTS

Between the years 1980-1990, overall 87 articles appeared in neurosurgical journals and another 28 in journals not primarily related to neurosurgery as indexed by SCI (Total=115). When Medline was included in the evaluation as was also done by Trojanowski et al, the number increased to 93 in neurosurgical journals and 33 in non-neurosurgical journals, totalling 126. The broader figure of Medline (n=93) was taken for comparison with the number of papers coming from other European countries, details of which are given in Tables 1 and 2. These were modified from those in the article by Trojanowski et al after appropriate correction (unpublished data, letter in progress to *Acta Neurochirurgica*). It is apparent that Turkey has a moderate (but steadily increasing) performance exceeding that of Portugal, Greece, Ireland and all other countries in Eastern Europe (n=7) when considered on the basis of heterogeneous European literature. When publications in American journals were taken into consideration, however, Turkey outweighed the performance of Austria, Belgium, Finland, Ireland and Norway in addition to Greece, Portugal and Eastern European countries.

For citation analysis, the publications from Turkey between 1965-1979 were also gathered in an attempt to let the younger generations of neurosurgeons be more aware of the past. There were 12 papers from Turkey during this period, six by Avman as the first author. Altogether the citation pattern of 115+12=127 papers was then sought. The total number of citations received by 115 publications in the 1980-1990 period was 314.

Twelve publications from 1965-1979 were cited 114 times. The total number of citations to neurosurgical article from Turkey then reached 428. The analysis showed that the maximum number an article from a neurosurgical centre was cited reached 33 (Pamir et al, 1981-"Papillaedema in Behçet's Syndrome"). The second best performance was 32

Table I: Contribution of Authors from European neurosurgical institutions to European neurosurgical journals (Modified from Trojanowski et al. Table 3a)

COUNTRY	EUROPEAN JOURNALS									
	Acta	CNN	BjNs	JNNP	JNSc	Ncha	Nche	ZsRev	ZNcha	Total
Austria	66	7	2	16	10	28	3	1	28	161
Belgium	33	48	—	45	—	1	38	1	—	167
Bulgaria	1	—	—	1	—	1	—	—	2	5*
Czechoslovakia	6	—	—	3	—	—	—	—	23	32*
Denmark	182	6	14	30	2	2	—	—	—	236
Finland	78	3	—	51	1	1	—	—	3	137
France	75	1	4	98	10	12	633	—	1	834
FRG	613	9	6	97	13	227	4	104	28	1101
GDR	4	1	—	2	1	6	—	1	208	223
Greece	10	—	3	9	3	4	3	—	—	32*
Hungary	33	—	—	2	2	1	1	1	14	54
Iceland	2	—	—	—	—	—	—	—	—	—
Ireland	—	—	5	33	1	—	—	—	—	39*
Italy	570	18	4	173	365	79	28	—	28	1265
Netherlands	67	210	3	142	3	1	5	—	—	431
Norway	93	1	2	16	—	4	1	—	—	117
Poland	19	—	—	6	—	4	—	—	18	47
Portugal	2	—	1	9	—	—	2	—	—	14*
Romania	4	—	—	3	—	4	—	—	9	20*
Spain	54	2	2	77	15	12	10	—	4	176
Sweden	205	1	8	85	3	3	1	2	1	309
Switzerland	52	—	3	33	3	25	34	2	2	154
Turkey	20	5	1	—	1	7	5	2	4	45
U.K.	102	8	110	1638	5	6	8	2	2	1881
USSR	4	—	—	—	—	—	—	1	10	15*
Yugoslavia	8	—	2	13	1	2	4	—	2	32*
Total Europe	2302	320	170	2582	439	430	780	117	338	7529

* Those countries with less performance than TURKEY
 ^ Journals indexed as citing journal in SCI
 + Journals indexed as citing journal in SCI
 @ Journals not cited in SCI

Table II: Contribution of Authors from European neurosurgical institutions to American neurosurgical journals (Modified from Table 3b of Trojanowski et al. Neurosurgery column has been completely changed)

COUNTRY	AMERICAN JOURNALS			TOTAL
	J Neurosurg	Neurosurgery	Surg Neurol	
Austria	7	10	4	USA
Belgium	17	11	8	21
Bulgaria	—	1	—	36
Czechoslovakia	2	1	1	1
Denmark	37	9	11	4
Finland	12	5	10	57
France	38	43	74	27
FRG	63	58	67	155
GDR	—	1	—	188
Greece	3	2	3	1
Hungary	7	12	12	8
Iceland	—	—	—	31
Ireland	6	1	5	—
Italy	111	94	147	12
Netherlands	36	18	15	352
Norway	21	2	2	69
Poland	8	1	1	25
Portugal	—	6	—	10
Romania	3	1	1	6
Spain	77	33	44	5
Sweden	52	28	20	154
Switzerland	31	24	30	100
Turkey	12	18	18	85
U.K.	119	69	77	48
USSR	5	1	4	265
Yugoslavia	6	4	5	10
Total	673	453	559	1685

* Those countries with less performance than TURKEY

citations to the article by Özgen et al, 1979. "The use of Computerized Tomography in the Diagnosis of Cerebral Hydatid Cysts". Gökay et al. (1984) were cited 18 times for "Supratentorial Intracerebral Schwannomas" and Avman et al. (1978) 14 times for "Meningiomas of the Third Ventricle". A total of 33 (33/127=26%) articles have exceeded the expected number of citations. Again a total of 33 articles were not even cited once (26%).

DISCUSSION

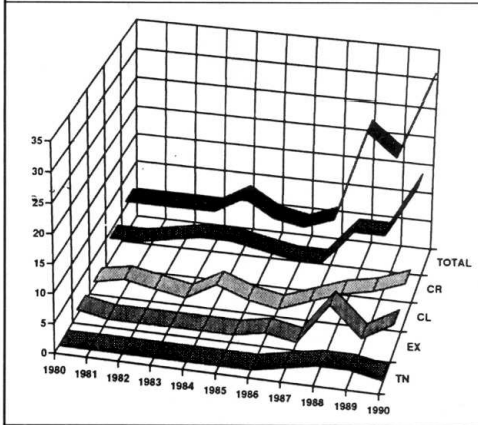
The numbers and the tables are so demonstrating that actually need no further discussion. However, a few points need further mention. As seen clearly in Table 3 total number reached in the first 7 years of the 80's was far surpassed by the performance during the last three years of the same period. Hence it was not just the number. The proportion of experimental studies seems to have made a quantum leap with a seven-fold increase (Figure 1). Another thing to be proud of are the technical notes that started to come out from Turkey since 1987 totalling seven as of 1990. The data for 1991-1993 shows exactly the same trend (unpublished data).

Table III : Yearly distribution of the articles from neurosurgical departments in Turkey according to the type of article To (be able to) show the change in trend the article by Berkay on perspectives of neurosurgery in Turkey was excluded, n=126-1=125)

ARTICLE TYPE					
Year	CR	CL	EX	TN	Yearly Total
1980	4	1	1	—	6
1981	4	2	—	—	6
1982	5	1	—	—	6
1983	6	—	—	—	6
1984	6	3	—	—	9
1985	5	1	—	—	6
1986	4	1	—	—	5
1987	4	2	—	1	7
Subtotal	38	10	2	1	51
%	74	20	4	2	100
1988	10	4	7	2	23
1989	10	5	2	2	19
1990	19	7	5	1	32
Subtotal	39	16	14	5	74
%	53	21	19	7	100
Total	77	26	16	6	125
%	61	21	13	5	100

CR=Case report(s). CL=Clinical study or review.
EX=Experimental study
TN=Technical note

Figure 1 : Graph depicting the change in trend according to publication type (CR=Case report(s), CL=Clinical study or review, EX=experimental study, TN=Technical note, Total=yearly total)



Dr.Trojanowski may have forgotten to list the Turkish performance in this recent article or might not even have bothered, but it was his incomplete data that prompted us to reveal the fact that neurosurgical articles from Turkey during the period of his study formed a sleeping-stone for more than 300 articles in respected journals hence helping the scientific build-up. The impact factor as documented by SCI has been an invaluable guide for colleagues expecting a wider spread use of their scientific material. Briefly, it is a waste of scientific material if authors settle with journals having less IF.

To conclude, we honour the memory of Professor Avman with the recorded performance of his six papers published from Turkey receiving 45 citations (Table IV).

Table IV : Data showing the first author, volume, page, year, type, journal of Turkish publications received as of Dec.31st, 1993 (The average impact factor is given in the order of VOLUME PAGE YEAR 1st AUTHOR TYPE # C. TAT.ON(S). The abbreviations listed in table 3 for article types also apply to this table except that IN stands for information on the status of Turkish neurosurgery)

I. PUBLICATIONS IN CITING JOURNALS INDEXED IN SCI NEUROSURGICAL JOURNALS					
J	Neurosurg				(2.196)
42	580	75	Kaya U	CL	27
50	339	79	Özgen T	CL	32*
52	276	80	Kansu T	CR	4
55	289	81	Gökalp Hz	CR	7
56	158	82	Arasil E	CR	7

58	133	83	Selekler K	CR	5
59	703	83	Barlas O	CR	6
60	647	84	Özgen T	CR	6
60	842	84	Altınörs N	CR	5
61	399	84	Özgen T	CR	10
65	115	86	Aydın Y	CR	3
69	660	88	Zileli	CL	1
69	772	88	Paşaoğlu A	CR	1
71	929	89	Kalelioğlu M	CR	2
Neurosurgery (1.235)					
4	431	79	Gökalp HZ	CR	1
7	419	80	Berkay F	IN	1
10	746	82	Kaya U	CR	3
15	104	84	Özden B	CR	7
16	379	85	Aydın Y	CR	9
19	641	86	İplikçioğlu AC	CR	7
21	582	87	Altınörs N	CR	—
21	909	87	Ergünger MF	CR	—
22	594	88	Korfalı E	CR	3
22	994	88	Korfalı E	EX	10*
23	516	88	Altınörs N	CR	1
24	99	89	Senveli E	CR	3
24	924	89	Ergünger MF	CR	1
25	649	89	Bilge T	CR	1
27	137	90	İplikçioğlu	CR	1
27	302	90	İplikçioğlu	CR	—
27	463	90	Gökalp HZ	CR	—
27	787	90	Bilge T	CR	—
Acta Neurochir (Wien) (0.686)					
21	265	69	Avman N	CR	13
42	217	78	Avman N	CR	14*
S28	588	79	Avman N	TN	4
52	219	80	Avman N	CR	7
53	267	80	Gökalp HZ	CR	5
S30	363	80	Kanpolat Y	EX	2
56	73	81	Tunçbay E	CR	2
57	115	81	Gökalp HZ	CR	1
59	227	81	Hekim N	CL	4
89	135	87	Kanpolat Y	CR	—
S39	96	87	Kanpolat Y	TN	1
91	151	88	Kanpolat Y	TN	3*
95	131	88	Egemen N	EX	6*
96	141	89	Yıldızhan A	EX	4*
97	71	89	Paşaoğlu A	CL	3*
97	83	89	Paşaoğlu A	CR	—
98	105	89	Kanpolat Y	TN	—
100	79	89	Paşaoğlu A	EX	—
100	112	89	Kanpolat Y	TN	1
104	54	90	Özgen T	CL	—
106	136	90	Paşaoğlu A	CL	1
107	167	90	Peker S	CR	1
107	140	90	Kulalı A	CL	1
Surg Neurol ((0.659)					
4	327	75	Avman N	CR	3
8	103	77	Gökalp HZ	CR	2
9	9	78	Arsal E	CR	7
9	107	78	Avman N	CR	5
11	5	79	Avman N	CR	6
18	50	82	Aydın Y	CR	1
19	276	83	Alp H	CR	2
20	57	83	Tuncay E	CR	2

20	227	83	Bilge T	CR	6*
21	53	84	Pamir MN	CL	7*
22	69	84	Gökay H	CR	18*
24	77	85	Alp H	CR	2
26	557	86	Açıköz B	EX	3
29	183	88	Paşaoğlu S	EX	1
30	228	88	İplikçioğlu AC	CR	—
30	269	88	Korfalı E	CL	—
30	339	88	Baykaner K	CL	3*
30	342	88	Akalan N	EX	2
31	402	89	Orbay T	CR	2
33	192	90	Orbay T	EX	—
33	253	90	Orbay T	EX	—
33	391	90	Çataltepe	CR	1
34	212	90	Paşaoğlu S	EX	—
Neurochirurgie (0.372)					
30	153	84	Namer IJ	CL	5*
30	401	84	Namer IJ	CR	3*
31	429	85	Namer IJ	CR	6*
34	37	88	K.L.C. K	CR	—
36	394	90	Kanpolat Y	TN	1*
NEUROSCIENCE JOURNALS NOT PRIMARILY RELATED TO NEUROSURGERY					
Arch Neurol (2.877)					
38	643	81	Pamir MN	CL	33*
J Neurol Sci (1.669)					
48	419	80	Ertekin C	CL	13
Neuroradiology (0.936)					
32	78	90	Paşaoğlu S	CR	2*
32	481	90	Özgen T	CL	1
Neuropediatrics (0.928)					
21	140	90	Yalaz K	CR	3*
Child's Nerv Syst (0.403)					
4	45	88	Övül I	CR	—
6	54	90	Kulalı A	CR	3*
6	462	90	Benli K	CR	2*
App Neurophysiol (0.222)					
48	258	85	Kanpolat Y	CL	—
MISCELLANEOUS JOURNALS					
Infection (1.031)					
17	309	89	Çeviker N	CR	2
18	191	90	Candan S	CR	—
18	386	90	Kalelioğlu M	CR	—
23	762	88	Paşaoğlu A	EX	5*
Res Exp Med (0.563)					
190	111	90	Ceylan S	CL	3*
Acta Ophthalmol (0.490)					
59	302	81	Tunçbay E	CR	—

Ann Plast Surg (0.359)					
21	418	88	Paşaoğlu	A	EX
Prostagl Leucot Ess (0.957)					
39	203	90	Palaoğlu S	EX	1
Br J Ophthalmol (0.912)					
73	832	89	Bilgiç S	CL	2*
II. PUBLICATIONS IN CITED JOURNALS INDEXED IN SCI					
NEUROSURGICAL JOURNALS					
Clin Neurol Neurosurg (0.363)					
79	228	76	Gökalp HZ	CL	—
82	269	80	Gökalp HZ	CR	1
89	281	87	Şenveli E	CR	—
90	83	88	Gökalp HZ	CR	4*
90	253	88	Palaoğlu S	CR	1
92	155	90	Şekerci	CR	—
Neurochirurgia (0.183)					
28	145	85	Kars Z	CR	1
29	114	86	Kars Z	CR	3*
30	11	87	Namer IJ	CL	3*
31	160	88	Övül I	CR	—
32	84	89	Altınörs N	CR	1*
33	16	90	Özgen T	CL	2*
33	20	90	Gökalp HZ	CR	2*
Neurosurgical Rev (0.249)					
12	107	89	Zileli M	CL	—
12	305	89	Çolak A	CL	1*
NEUROSCIENCE JOURNALS NOT PRIMARILY RELATED TO NEUROSURGERY					
Paraplegia (0.287)					
24	379	86	Açıköz B	CR	1
27	359	89	Açıköz B	CL	—
28	265	90	Açıköz B	CR	—
J Clin Neuroophthalmol (0.331)					
2	197	82	Kars Z	CR	1
2	271	82	Kars Z	CR	—
3	119	83	Kars Z	CR	—
9	254	89	Tekkök IH	CR	1*
10	18	90	Çolak A	CR	—
10	131	90	Çataltepe O	CR	1*
10	271	90	Pamir MN	CR	—
III. PUBLICATIONS IN JOURNALS NOT LISTED IN SCI BUT IN MEDLINE (No Impact Factor Is Given)					
NEUROSURG. CAL JOURNALS					
Br J Neurosurg					
3	217	89	İplikçiöğlu AC	CR	
J Neurosurgery Sci					
34	65	90	Palaoğlu S	CR	

Zentralbl Neurochir					
48	308	87	Aydın IH	CL	
49	109	88	Mertol T	CR	
49	210	88	Aydın IH	CL	
49	324	88	Aydın IH	TN	
NEUROSCIENCE JOURNALS NOT PRIMARILY RELATED TO NEUROSURGERY					
Neurol Res					
6	194	84	Avman N	CL	
10	232	88	Zileli M	EX	
12	99	90	Kulalı A	EX	
J Microsurg					
3	176	82	Avman N	CL	
MISCELLANEOUS JOURNALS					
Rad Med					
8	111	90	Dönmez T	CL	

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