

The fifty most cited Italian articles in the orthopaedic literature

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Abstract

Purposes It is widely known that in Orthopaedics, as in each specialty, the academic influence of an article is also determined by the number of times the article is cited. The aim of this study was to identify the 50 most frequently cited Italian orthopaedics journal articles and to analyse the characteristics that might have made them more citable.

Methods Science Citation Index Expanded was searched for the 50 most frequently cited Italian orthopaedics journal articles between 1988 and 2013 in the subject category “Orthopaedics”.

Results The 50 most frequently cited articles were all published in English and were published in 12 of the 67 journals in the subject category “Orthopaedics” in the Institute for Scientific Information Web Science (Thomson Reuters, New York, New York, USA). One half of the articles were published before 2000 and the other half later. The number of citations ranged from 423 of the first article (mean citation/years 21.15) to 83 of the fiftieth (mean citation/years 16.60). The articles were all categorized under orthopaedic field, but each of them spanned from orthopaedics to a specific sub-specialty. The majority was clinical articles ($n = 39$), and the most common fields were sport orthopaedic surgery (including arthroscopy and cartilage) ($n = 19$) and biomechanics ($n = 12$).

Conclusions This list of 50 most frequently cited Italian articles is, to our knowledge, significantly important for the general orthopaedic scientific community, particularly for

the Italian orthopaedic community. Researchers and doctors may use this work to make their future publications more influential and citable.

Keywords Cited articles · Italian orthopaedics · Article influence · Citations per years

Introduction

The number of times an article is cited represents a useful method to measure, together with other parameters, its academic influence. However, the academic influence of an article is not equally related to the quality of the article itself. The publication of the first orthopaedic-specific journals traced back to the end of the 1800s with Transactions of the American Orthopaedic Association (now evolved into the American and British versions of “The Journal of Bone and Joint Surgery” [1]).

Currently, there are 67 journals categorized under the topic heading of “Orthopaedics” in the Institute for Scientific Information (ISI) Web Science (Thomson Reuters, New York, New York, USA) ranging from general orthopaedics to orthopaedics sub-specialty areas. The quality and the amount of publications available are remarkable and since nineteenth century are more and more increasing. Such amount of publications comprises articles with both more and less academic impacts. In the past years, many authors had researched the most frequently cited articles under the topic of surgical and medical specialties [2–5]. In orthopaedics, few studies as those of Lefaivre et al. [6, 7] were conducted under the topic of general orthopaedics, whereas other authors specifically analysed the most frequently cited articles in orthopaedic sub-specialties [8–13].

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The most frequently cited orthopaedic articles were also analysed by country of origin [14].

Therefore, this study aims to collect, categorize and analyse the 50 most frequently cited Italian articles in the orthopaedic literature. The above-mentioned article does not consider the quality of the analysed articles, whereas it aims to determine the reasons why such articles resulted within the most frequently cited ones.

Furthermore, this study also aims to identify the influence of the articles and the Italian authors in order to help possible future research and study in the international scientific literature.

Materials and methods

Since 1945, the Institute for Science Information has been collecting and categorizing citation and information regarding the academic impact of the published articles and scientific researches. Such information has been electronically available since 1979 using the citation system “Science Citation Index Expanded”, in Web of Science [15].

Using the Science Citation Index Expanded database through the ISI Web of Knowledge, in August 2014, we performed a comprehensive search in order to classify the 50 most frequently cited articles in the orthopaedic literature during the last 30 years. We first selected the articles ranging from year 1983 to 2013 within the Journal Citation Report Science Edition, and then, we searched for citations to articles published in the subject category “Orthopaedics”. After, we filtered by country to exclude articles not originating from Italy, with publications in English. The 200 most frequently cited Italian articles identified were reviewed to exclude articles without a primary address or a reprint address in Italy. Hence, the 50 most frequently cited Italian articles among articles, review articles or reports were identified. The data collected for each article included the article title, journal type, name of author/s, country of origin, year of publication, article type, article sub-type (original study, review article, opinion, case report) and the orthopaedic field. In addition, we determined the citation density that is the total number of citation/years since publication and the impact factor of the publication journals. These 50 articles were published in 12 of the 67 journals categorized under the topic heading of “Orthopaedics” in the ISI Web Science. A correlation analysis (Pearson) of the impact factor of the journal of publication and the number of citations was performed; in addition, we correlated the impact factor and the citation density of the top 50 articles. A value of $p < 0.05$ was considered to be statistically significant.

Results

A total of 193,826 articles were published in orthopaedic journals between 1988 and 2013, but only 3,803 of those articles were originated in Italy. All the articles of our list of the 50 most frequently cited Italian articles in the orthopaedic literature were published in English. The majority of those articles was published between 2000 and 2013 ($n = 27$), no publications between 2012 and 2013 were included in our list top 50 articles, and 2005 resulted the year of most frequently cited articles ($n = 7$). The number of citations for the 50 most frequently cited Italian articles ranged between 423 of the first article (mean citation/years 21.15) and 83 of the fiftieth (mean citation/years 16.60). The article title, author/s, year of publication, journal title where the article was published, number of citations and citation density/year are listed in Table 1. The articles of this list were published in 12 of the 67 journals categorized under the topic heading of “Orthopaedics” in the ISI Web Science, including three general orthopaedics journals and nine sub-specialty journals, as shown in Table 2.

The total number of publications/journal, the impact factor of 2013 and the impact factor of the last 5 years are shown in Table 3. With regard to the number of the article sub-type, 43 were original studies followed by 6 review articles and 1 report. The effect of the impact factor of the journal on the ranking was evaluated using a correlation analysis; however, there was no correlation between the impact factor of 2013 ($r = -0.101$; $p = 0.321$) or the impact factor of the last 5 years ($r = 0.088$; $p = 0.279$). A weak correlation was found between the year of publication and the number of citations ($r = 0.220$; $p = 1.569$).

Discussion

The importance and the influence of an article in the medical literature are also related to the number of citations obtained by the article itself. In fact, the number of citations indicates the number of times the article was read and made reference for future publications. The number of citations depends not only on the type of the article topic but also from the effect it has on the authors who read the article and make reference to the article for their future publications. However, the number of citations and the impact factor on the journal in which the article is published are not always an indication of the quality of the article itself. Indeed, both the names of the authors and the journals where the article is published may influence the number of citation significantly. Studies, as our study on the most frequently cited Italian articles in the orthopaedics

Table 1 List of top 50 cited Italian orthopaedic articles

Rank	Top 50 publications	Count	Citation density (cites per year)
(1)	Cappozzo A, Catani F, Della Croce U, Leardini A (1995) Position and orientation in-space of bones during movement—anatomical frame definition and determination. <i>Clinical Biomechanics</i> 10:171–178. doi: 10.1016/0268-0033(95)91394-T	423	21.15
(2)	Aglietti P, Buzzi R, Zaccherotti G, DeBiase P (1994) Patellar tendon versus doubled semitendinosus and gracilis tendons for anterior cruciate ligament reconstruction. <i>American journal of sports medicine</i> 22:211–218. doi: 10.1177/036354659402200210	324	15.43
(3)	Cappozzo A, Catani F, Leardini A, Benedetti MG, Della Croce U (1996) Position and orientation in space of bones during movement: experimental artefacts. <i>Clinical biomechanics</i> 11:90–100. doi: 10.1016/0268-0033(95)00046-1	301	15.84
(4)	Leardini A, Chiari L, Della Croce U, Capozzo A. (2005) Human movement analysis using stereophotogrammetry—part 3. Soft tissue artifact assessment and compensation. <i>Gait & posture</i> 21:212–225. doi: 10.1016/j.gaitpost.2004.05.002	262	26.20
(5)	Marcacci M, Berruto M, Brocchetta, D, Delcogliano A, Ghinelli D, Gobbi A, Kon E, Pederzini L, Rosa D, Sacchetti GL, Stefani G, Zanasi S. (2005) Articular cartilage engineering with hyalograft (r) c - 3-year clinical results. <i>Clinical orthopaedics and related research</i> : 96–105. doi: 10.1097/01.blo.0000165737.87628.5b	223	22.30
(6)	Paley D, Catagni MA, Argnani F, Villa A, Benedetti GB, Cattaneo R. (1989) Ilizarov treatment of tibial nonunions with bone loss. <i>Clinical orthopaedics and related research</i> : 146–165	171	6.58
(7)	Franceschi F, Ruzzini L, Longo UG, Martina FM, Zobel BB, Maffulli N, Denaro V. (2007) Equivalent clinical results of arthroscopic single-row and double-row suture anchor repair for rotator cuff tears—a randomized controlled trial. <i>American journal of sports medicine</i> 35:1254–1260. doi: 10.1177/0363546507302218	168	21.00
(8)	Boriani S, Weinstein JN, Biagini R. (1997) Spine update—primary bone tumors of the spine—terminology and surgical staging. <i>Spine</i> 22:1036–1044. doi: 10.1097/00007632-199705010-00020	167	9.28
(9)	Riener R, Rabuffetti M, Frigo C. (2002) Stair ascent and descent at different inclinations. <i>Gait & posture</i> 15:32–44. doi: 10.1016/S0966-6362(01)00162-X	159	12.23
(10)	Ferretti A, Papandrea P, Conteduca F, Mariani PP. (1992) Knee ligament injuries in volleyball players. <i>American journal of sports medicine</i> 20:203–207. doi: 10.1177/036354659202000219	159	6.91
(11)	Cappozzo A, Della Croce U, Leardini A, Chiari L. (2005) Human movement analysis using stereophotogrammetry - part 1: theoretical background. <i>Gait & posture</i> 21:186–196. doi: 10.1016/j.gaitpost.2004.01.010	155	15.50
(12)	Ronca F, Palmieri L, Panicucci P, Ronca G. (1998) Anti-inflammatory activity of chondroitin sulfate. <i>Osteoarthritis and cartilage</i> 6:14–21. doi: 10.1016/S1063-4584(98)80006-X	146	8.59
(13)	Benedetti MG, Catani F, Leardini A, Pignotti E, Giannini S. (1998) Data management in gait analysis for clinical applications. <i>Clinical biomechanics</i> 13:204–215. doi: 10.1016/S0268-0033(97)00041-7	135	7.94
(14)	Chiari L, Rocchi L, Cappello A. (2002) Stabilometric parameters are affected by anthropometry and foot placement. <i>Clinical Biomechanics</i> 17:666–677. doi: 10.1016/S0268-0033(02)00107-9	133	10.23
(15)	Aglietti P, Giron F, Buzzi R, Biddau F, Sasso F. (2004) Anterior cruciate ligament reconstruction: Bone-patellar tendon-bone compared with double semitendinosus and gracilis tendon grafts - A prospective, randomized clinical trial. <i>Journal Of Bone And Joint Surgery-American Volume</i> 86A:2143–2155	130	11.82
(16)	Aglietti P, Buzzi R, Dandria S, Zaccherotti G. (1993) Patellofemoral problems after intraarticular anterior cruciate ligament reconstruction. <i>Clinical orthopaedics and related research</i> : 195–204	125	5.68
(17)	Capanna R, Morris Hg, Campanacci D, Delben M, Campanacci M. (1994) Modular uncemented prosthetic reconstruction after resection of tumors of the distal femur. <i>Journal of bone and joint surgery-british volume</i> 76b:178–186	122	5.81
(18)	Chiari L, Della Croce U, Leardini, A, Capozzo A. (2005) Human movement analysis using stereophotogrammetry - Part 2: Instrumental errors. <i>Gait & Posture</i> 21:197–211. doi: 10.1016/j.gaitpost.2004.04.004	121	12.10
(19)	Postacchini F, Gumina S, De Santis P, Albo F. (2002) Epidemiology of clavicle fractures. <i>Journal of shoulder and elbow surgery</i> 11:452–456. doi: 10.1067/mse.2002.126613	120	9.23
(20)	Della Croce U, Leardini A, Chiari L, Capozzo A. (2005) Human movement analysis using stereophotogrammetry - Part 4: assessment of anatomical landmark misplacement and its effects on joint kinematics. <i>Gait & posture</i> 21:226–237. doi: 10.1016/j.gaitpost.2004.05.003	119	11.90

Table 1 continued

Rank	Top 50 publications	Count	Citation density (cites per year)
(21)	Cattaneo R, Catagni M, Johnson Ee. (1992) The treatment of infected nonunions and segmental defects of the tibia by the methods of ilizarov. <i>Clinical orthopaedics and related research</i> : 143–152	118	5.13
(22)	Aglietti P, Buzzi R, Dandria S, Zaccherotti G. (1992) Long-term study of anterior cruciate ligament reconstruction for chronic instability using the central 1/3 patellar tendon and a lateral extraarticular tenodesis. <i>American journal of sports medicine</i> 20:38–45. doi: 10.1177/036354659202000111	117	5.09
(23)	Kon E, Gobbi A, Filardo G, Delcogliano M, Zaffagnini S, Marcacci M. (2009) Arthroscopic Second-Generation Autologous Chondrocyte Implantation Compared With Microfracture for Chondral Lesions of the Knee Prospective Nonrandomized Study at 5 Years. <i>American journal of sports medicine</i> 37:33–41. doi: 10.1177/0363546508323256	113	18.83
(24)	Leardini A, Benedetti MG, Catani F, Simoncini L, Giannini S. (1999) An anatomically based protocol for the description of foot segment kinematics during gait. <i>Clinical biomechanics</i> 14:528–536. doi: 10.1016/S0268-0033(99)00008-X	113	7.06
(25)	Fabbriciani C, Milano G, Demontis A, Fadda S, Zirano F, Mulas PD. (2004) Arthroscopic versus open treatment of Bankart lesion of the shoulder: A prospective randomized study. <i>Arthroscopy-the journal of arthroscopic and related surgery</i> 20:456–462. doi: 10.1016/j.arthro.2004.03.001	108	9.82
(26)	Helgason B, Perilli E, Schileo E, Taddei F, Brynjolfsson S, Viceconti M. (2008) Mathematical relationships between bone density and mechanical properties: A literature review. <i>Clinical biomechanics</i> 23:135–146. doi: 10.1016/j.clinbiomech.2007.08.024	104	14.86
(27)	Boriani S, Biagini R, Delure F, Bertoni F, Malaguti MC, DiFiore M, Zanoni A. (1996) En bloc resections of bone tumors of the thoracolumbar spine—A preliminary report on 29 patients. <i>Spine</i> 21:1927–1931. doi: 10.1097/00007632-199608150-00020	104	5.47
(28)	Santori N, Villar RN. (2000) Acetabular labral tears: Result of arthroscopic partial limbectomy. <i>Arthroscopy</i> 16:11–15. doi: 10.1016/S0749-8063(00)90121-X	103	6.87
(29)	Aglietti P, Giron F, Cuomo P, Losco M, Mondanelli N. (2007) Single- and double-incision double-bundle ACL reconstruction. <i>Clinical orthopaedics and related research</i> : 108–113. doi: 10.1097/BLO.0b013e31802baaf4	102	12.75
(30)	Castricini R, Longo UG, De Benedetto M, Panfoli N, Pirani P, Zini R, Maffulli N, Denaro V. (2011) Platelet-Rich Plasma Augmentation for Arthroscopic Rotator Cuff Repair A Randomized Controlled Trial. <i>American journal of sports medicine</i> 39:258–265. doi: 10.1177/0363546510390780	101	25.25
(31)	Gobbi A, Nunag P, Malinowski K. (2005) Treatment of full thickness chondral lesions of the knee with microfracture in a group of athletes. <i>Knee surgery sports traumatology arthroscopy</i> 13:213–221. doi: 10.1007/s00167-004-0499-3	100	10.00
(32)	Maiuri F, Iaconetti G, Gallicchio B, Manto A, Briganti F. (1997) Spondylodiscitis - Clinical and magnetic resonance diagnosis. <i>Spine</i> 22:1741–1746. doi: 10.1097/00007632-199708010-00012	98	5.44
(33)	Gobbi A, Francisco RA, Lubowitz JH, Allegra F, Canata G. (2006) Osteochondral lesions of the talus: Randomized controlled trial comparing chondroplasty, microfracture, and osteochondral autograft transplantation. <i>Arthroscopy-the journal of arthroscopic and related surgery</i> 22:1085–1092. doi: 10.1016/j.arthro.2006.05.016	97	10.78
(34)	Lazzarini L, Mader JT, Calhoun JH. (2004) Osteomyelitis in long bones. <i>Journal of bone and joint surgery-american volume</i> 86A:2305–2318	96	8.73
(35)	Boriani S, De Lure F, Campanacci L, Gasbarrini A, Bandiera S, Biagini R, Bertoni F, Picci P. (2001) Aneurysmal bone cyst of the mobile spine - Report on 41 cases. <i>Spine</i> 26:27–35. doi: 10.1097/00007632-200101010-00007	96	6.86
(36)	Boriani S, Chevalley F, Weinstein JN, Biagini R, Campanacci L, Delure F, Piccilli P. (1996) Chordoma of the spine above the sacrum - Treatment and outcome in 21 cases. <i>Spine</i> 21:1569–1577. doi: 10.1097/00007632-199607010-00017	96	5.05
(37)	Bovenzi M, Zadini A. (1992) Self-reported low-back symptoms in urban bus drivers exposed to whole-body vibration. <i>Spine</i> 17:1048–1059. doi: 10.1097/00007632-199209000-00007	94	4.09
(38)	Negrini S, Carabalona R. (2002) Backpacks on! Schoolchildren's perceptions of load, associations with back pain and factors determining the load. <i>Spine</i> 27:187–195. doi: 10.1097/00007632-200201150-00014	93	7.15
(39)	Rinonapoli E, Mancini GB, Corvaglia A, Musiello S. (1998) Tibial osteotomy for varus gonarthrosis - A 10- to 21-year followup study. <i>Clinical orthopaedics and related research</i> : 185–193	93	5.47
(40)	Marcacci M, Zaffagnini S, Kon E, Visani A, Iacone F, Loretto I. (2002) Arthroscopic autologous chondrocyte transplantation: technical note. <i>Knee surgery sports traumatology arthroscopy</i> 10:154–159. doi: 10.1007/s00167-001-0275-6	92	7.08

Table 1 continued

Rank	Top 50 publications	Count	Citation density (cites per year)
(41)	Cinotti G, Gumina S, Ripani M, Postacchini F. (1999) Pedicle instrumentation in the thoracic spine—A morphometric and cadaveric study for placement of screws. <i>Spine</i> 24:114–119. doi: 10.1097/00007632-199901150-00003	92	5.75
(42)	Maroudas A, Palla G, Gilav E. (1992) Racemization of aspartic-acid in human articular-cartilage. <i>Connective tissue research</i> 28:161–169. doi: 10.3109/03008209209015033	92	4.00
(43)	Campanacci M, Puggieri P, Gasbarrini A, Ferraro A, Campanacci L. (1999) Osteoid osteoma—Direct visual identification and intralesional excision of the nidus with minimal removal of bone. <i>Journal of bone and joint surgery-british volume</i> 81B:814–820. doi: 10.1302/0301-620X.81B5.9313	90	5.62
(44)	Santori FS, Vitullo A, Stopponi M, Santori N, Ghera S. (1994) Prophylaxis against deep-vein thrombosis in total hip-replacement - comparison of heparin and foot impulse pump. <i>Journal of bone and joint surgery-british volume</i> 76b:579–583	0	4.29
(45)	Marcacci M, Molgora AP, Zaffagnini S, Vescellari A, Iacono F, Lo Presti M. (2003) Anatomic double-bundle anterior cruciate ligament reconstruction with hamstrings. <i>Arthroscopy-the journal of arthroscopic and related surgery</i> 19:540–546. doi: 10.1053/jars.2003.50129	89	7.42
(46)	Stagni R, Fantozzi S, Cappello A, Leardini A. (2005) Quantification of soft tissue artefact in motion analysis by combining 3D fluoroscopy and stereophotogrammetry: a study on two subjects. <i>Clinical biomechanics</i> 20:320–329. doi: 10.1016/j.clinbiomech.2004.11.012	88	8.80
(47)	Leardini A, Benedetti MG, Berti L, Bettinelli D, Nativio R, Giannini S. (2007) Rear-foot, mid-foot and fore-foot motion during the stance phase of gait. <i>Gait & posture</i> 25:453–462. doi: 10.1016/j.gaitpost.2006.05.017	85	10.62
(48)	Mastrogiacomo M, Cancedda R, Quarto R. (2001) Effect of different growth factors on the chondrogenic potential of human bone marrow stromal cells. <i>Osteoarthritis and cartilage</i> 9:S36–S40. doi: 10.1053/joca.2001.0442	84	6.00
(49)	Maffulli N, Testa V, Capasso G, Bifulco G, Binfield PM. (1997) Results of percutaneous longitudinal tenotomy for Achilles tendinopathy in middle- and long-distance runners. <i>American journal of sports medicine</i> 25:835–840. doi: 10.1177/036354659702500618	84	4.67
(50)	Kon E, Buda R, Filardo G, Di Martino A, Timoncini A, Cenacchi A, Fornasari P, Giannini S, Marcacci M. (2010) Platelet-rich plasma: intra-articular knee injections produced favorable results on degenerative cartilage lesions. <i>Knee surgery sports traumatology arthroscopy</i> 18:472–479. doi: 10.1007/s00167-009-0940-8	83	16.60

Table 2 Number of articles on top 50 list by source journal

Journal name	Number of publications	Journal impact factor 2013
Spine	8	2.447
Clinical biomechanics	7	1.880
American Journal of sports medicine	7	4.699
Gait and posture	6	2.299
Clinical orthopaedics and related research	6	2.882
Arthroscopy	4	3.191
Journal of bone and joint surgery—British volume	3	2.801
Knee surgery sports traumatology arthroscopy	3	2.837
Osteoarthritis and cartilage	2	4.663
Journal of bone and joint surgery—American volume	2	4.309
Journal of shoulder and elbow surgery	1	2.365
Connective tissue research	1	1.982

field, were already made during the years by other authors in various specialties [1–4] and in the orthopaedics field, in different countries [13]. In Italy, thanks to the ancient tradition and the great number of authors and researchers, the research in the orthopaedics field has a significant role within the international scientific community (“Capozzo A, Catani F, Della Croce U, Leardini A (1995) Position and orientation in-space of bones during movement - anatomical frame definition and determination. *Clinical biomechanics* 10:171–178. doi:[10.1016/0268-0033\(95\)91394-T](https://doi.org/10.1016/0268-0033(95)91394-T)” is the first Italian article within the most cited and is 86 out of 182,891 English articles from all over the world, whereas “Aglietti P, Buzzi R, Zaccherotti G, DeBiase P (1994) Patellar tendon versus doubled semitendinosus and gracilis tendons for anterior cruciate ligament reconstruction. *American journal of sports medicine* 22: 211–218. doi:[10.1177/036354659402200210](https://doi.org/10.1177/036354659402200210)” is the second Italian articles and is ranked 203rd in the list). The results we obtained show a remarkable heterogeneity of the topics in the 50 most frequently cited articles in the Italian literature (nine orthopaedics sub-specialties), but 29 (58 %) of those

Table 3 Number of articles on top 50 list by source journal

Abbreviated journal title	Number of publications	Journal impact factor (2013)	5-year impact factor
Spine	8	2.447	3.003
American J Sport Med	7	4.699	5.009
Clinin Biomech	7	1.880	2.589
Clin Orthop Relat Res	6	2.882	3.189
Gait Posture	6	2.299	2.985
Arthroscopy	4	3.191	3.552
J Bone Joint Surg Br	3	2.801	3.342
Knee Surg Sport Tr a	3	2.837	2.862
J Bone Joint Surg Am	2	4.309	4.384
Osteoarthr Cartilage	2	4.663	4.606
J Shoulder Elb Surg	1	2.365	2.699
Connect Tissue Res	1	1.982	1.996

Table 4 Number of articles by field

Sub-specialty	Number of publications
Sport medicine/arthroscopy	17
Biomechanics	12
Spine	6
General orthopaedic	4
Oncology	4
Traumatology	3
Basic science	2
Foot and ankle	1
Knee surgery	1

articles can be enclosed in two sub-specialties: sport medicine/arthroscopy and biomechanics (see Table 4). These data, from our perspective, indicate the impact of such topics on the international literature encouraging the Italian researchers who are willing to increase the possibility of being cited to examine such topics in depth, but also these data reveal the importance of the contribution for the development of such academic disciplines given by the Italian orthopaedic scientific community during the last 30 years. Differently from other similar studies regarding general orthopaedics [6] or orthopaedics sub-specialties [7–12], our study does not show that the presence of a score or a classification within an article increases the number of citations of the article itself (the first and the only article containing a classification is the eighth within the 50 most cited articles: Boriani S, Weinstein JN, Biagini R. (1997) Spine update-primary bone tumours of the spine-terminology and surgical staging. *Spine* 22:1036–1044 doi:10.

1097/00007632-199705010-00020). In accordance with Urrutia et al. [14], the study performed on the Italian orthopaedics literature did not show evidence of correlation between the impact factor of 2013 ($r = -0.101$; $p = 0.321$) and the impact factor of the last 5 years ($r = 0.088$; $p = 0.279$) and the number of citations. It is obvious that drawing up the list of the articles and defining the importance based on the number of citations have some limitations. As according to Lefavre et al. [7] and Stern et al. [16], this type of citation analysis does not account for self-citation, citations in textbooks and lectures, and an author's or authors' potential preference to cite articles in the journal in which they seek to publish their work [7, 16]. Secondly, this study is limited by the categorization of journals in Web of Science. By design, only articles in the 67 journals categorized as "Orthopaedics" journals were considered. Although this represents a long and complete list of orthopaedic-specific journals, articles in the topic area of orthopaedic surgery published in general medical and basic science literature were not considered here in order to leave out work that has been influential in the specialty [16]. There is a clear time effect in citation analysis, with the most recent articles being at a disadvantage [17], but only a weak correlation was found ($r = 0.220$) between the year of publication and the number of citations with statistic relevance ($p = 1.52$). Finally, Kuhnian philosophy [18] would tell us that in a scientific community, there is a tendency for adherence to a paradigm. In this context, that would mean that there is "snowball effect" to citations, as other authors are more likely to cite it because of previous citations, rather than for its content or quality. Nonetheless, we should understand the characteristics that make articles citable by other authors in order to help researchers and universities in Italy to promote quality research in the fields that could become more influential for the international scientific community.

Conflict of interest None.

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