



The Most Highly Cited Publications on Basketball Originate From English-Speaking Countries, Are Published After 2000, Are Focused on Medicine-Related Topics, and Are Level III Evidence

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Purpose: To identify the 50 most highly cited research publications in the sport of basketball. **Methods:** Using the Clarivate Analytics Web of Knowledge database and the search term “basketball”, we identified 2,704 articles. These articles were filtered by the total number of citations and the top 50 most cited articles with a central focus on basketball were selected for this analysis. For each article, we further identified and analyzed author name, publication year, country of origin, journal name, article type, main research topic area, competitive level, gender of study population, and the level of evidence. **Results:** Medicine-related topics, particularly those involving knee injuries, are more common than nonmedical topics (coaching, sports psychology etc.) among the highest cited articles. Articles originated from 13 different countries, with 48% originating in the United States. Only four authors had more than one article included in the top 50 most cited articles. **Conclusion:** A majority of the top 50 research articles were from English-speaking countries, published after 2000, primarily focused on medicine-related topics, and were Level III evidence. Publications examining knee injuries were the most highly cited and appear to be of high interest to current investigators. The prestige of an author’s name appeared to be less influential to the number of citations. **Clinical Relevance:** The top 50 most cited articles list will provide researchers, medical students, residents, and fellows with a foundational list of the most important and influential academic contributions to the basketball literature.

Introduction

Basketball was invented in 1891 by Dr. James Naismith.¹ Since then, it has slowly spread throughout the world. The International Basketball Federation estimates that there are currently 450 million players and fans of basketball worldwide.² In

the United States, nearly 40% of children between the ages of 6 and 14 play basketball. 11 million youth between the ages of 12 and 17 participate in the sport, including the 1 million high school students who play for school-sponsored teams.^{3,4} While basketball provides many benefits to those who participate in it, injuries are common. Yearly, basketball-related injuries result in roughly 340,000 emergency department visits for youth under the age of 24.⁵ These injuries often occur in game competition rather than in practice and most commonly effect the lower extremities.⁶

With such a wide influence, basketball has long been a focus of research in the scientific community. Topics of basketball research have included injury prevalence and prevention, player physiology,^{7,8} biomechanics,^{9,10} training methods to optimize development,¹¹⁻¹³ and the characteristics of winning teams.^{14,15} With such a wide scope, the literature on basketball is growing rapidly, and it is nearly impossible to stay up to date on recent publications. Bibliometric analyses provide a helpful way of condensing the ever-growing available research.

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Table 1. Top 50 Most Cited Articles in Basketball

Rank	Article Title	Total Citations	Citation Density
1	Arendt E, Dick R. Knee injury patterns among men and women in collegiate basketball and soccer: NCAA data and review of literature. <i>Am J Sports Med</i> 1995;23:694-701.	1,017	39.12
2	Aglioti SM, Cesari P, Romani M, Urgesi C. Action anticipation and motor resonance in elite basketball players. <i>Nat Neurosci</i> 2008;11:1109-1116.	636	48.92
3	Plisky PJ, Rauh MJ, Kaminski TW, Underwood FB. Star excursion balance test as a predictor of lower extremity injury in high school basketball players. <i>J Orthop Sports Phys Ther</i> 2006;36:911-919.	629	41.93
4	Krosshaug T, Nakamae A, Boden BP, et al. Mechanisms of anterior cruciate ligament injury in basketball: Video analysis of 39 cases. <i>Am J Sports Med</i> 2007;35:359-367.	626	44.71
5	Ford KR, Myer GD, Hewett TE. Valgus knee motion during landing in high school female and male basketball players. <i>Med Sci Sports Exer</i> 2003;35:1745-1750.	569	31.61
6	Agel J, Arendt EA, Bershadsky B. Anterior cruciate ligament injury in National Collegiate Athletic Association basketball and soccer: A 13-year review. <i>Am J Sports Med</i> 2005;33:524-530.	505	31.56
7	Koga H, Nakamae A, Shima Y, et al. Mechanisms for noncontact anterior cruciate ligament injuries: Knee joint kinematics in 10 injury situations from female team handball and basketball. <i>Am J Sports Med</i> . 2010;38:2218-2225.	416	37.82
8	Abdelkrim NB, Fazaa SE, Ati JE. Time-motion analysis and physiological data of elite under-19-year-old basketball players during competition. <i>Brit J Sports Med</i> 2007;41:69-75.	411	29.36
9	McKay GD, Goldie PA, Payne WR, Oakes BW. Ankle injuries in basketball: Injury rate and risk factors. <i>Brit J Sports Med</i> 2001;35:103-108.	352	17.60
10	McGuine T, Greene J, Best T, Levenson G. Balance as a predictor of ankle injuries in high school basketball players. <i>Clin J Sport Med</i> 2000;10:239-244.	347	16.52
11	McInnes SE, Carlson JS, Jones CJ, McKenna MJ. The physiological load imposed on basketball players during competition. <i>J Sports Sci</i> 1995;13:387-397.	316	12.15
12	Rozzi SL, Lephart SM, Gear WS, Fu FH. Knee joint laxity and neuromuscular characteristics of male and female soccer and basketball players. <i>Am J Sports Med</i> 1999;27:312-319.	292	13.27
13	Dirks KT. Trust in leadership and team performance: Evidence from NCAA basketball. <i>J Appl Psychol</i> 2000;85:1004-1012.	285	13.57
14	Mah CD, Mah KE, Kezirian EJ, Dement WC. The effects of sleep extension on the athletic performance of collegiate basketball players. <i>Sleep</i> 2011;34:943-950.	248	24.80
15	Bressel E, Yonker JC, Kras J, Heath EM. Comparison of static and dynamic balance in female collegiate soccer, basketball, and gymnastics athletes. <i>J Athl Train</i> 2007;42:42-46.	236	16.86
16	Montgomery PG, Pyne DB, Minahan CL. The physical and physiological demands of basketball training and competition. <i>Intl J Sports Physiol Perform</i> 2010;5:75-86.	226	20.55
17	Messina DF, Farney WC, DeLee JC. The incidence of injury in Texas high school basketball. <i>Am J Sports Med</i> 1999;27:294-299.	223	10.14
18	Kujala UM, Taimela S, Antti-Poika I, Orava S, Tuominen R, Myllynen P. Acute injuries in soccer, ice hockey, volleyball, basketball, judo, and karate: analysis of national registry data. <i>BMJ</i> 1995;311:1465-1468.	197	7.58
19	Zelisko JA, Noble HB, Porter M. A comparison of men's and women's professional basketball injuries. <i>Am J Sports Med</i> 1982;10:297-299.	196	5.03
20	Ziv G, Lidor R. Physical attributes, physiological characteristics, on-court performances and nutritional strategies of female and male basketball players. <i>Sports Med</i> 2009;39:547-568.	194	16.17
21	Gray J, Taunton JE, McKenzie DC, Clement DB, McConkey JP, Davidson RG. A survey of injuries to the anterior cruciate ligament of the knee in female basketball players. <i>Int J Sports Med</i> 1985;6:314-316.	192	5.33
22	Abdelkrim NB, Castagna C, Jabri I, Battikh T, El Fazaa S, El Ati J. Activity profile and physiological requirements of junior elite basketball players in relation to aerobic-anaerobic fitness. <i>J Strength Cond Res</i> 2010;24:2330-2342.	174	15.82
23	Ostojic SM, Mazic S, Dikic N. Profiling in basketball: Physical and physiological characteristics of elite players. <i>J Strength Cond Res</i> 2006;20:740-744.	168	11.20
24	LaBella CR, Huxford MR, Grissom J, Kim K-Y, Peng J, Christoffel KK. Effect of neuromuscular warm-up on injuries in female soccer and basketball athletes in urban public high schools: Cluster randomized controlled trial. <i>Arch Pediatr Adolesc Med</i> 2011;165:1033-1040.	167	16.70
25	Emery CA, Rose MS, McAllister JR, Meeuwisse WH. A prevention strategy to reduce the incidence of injury in high school basketball: A cluster randomized controlled trial. <i>Clin J Sport Med</i> 2007;17:17-24.	167	16.70

(continued)

Table 1. Continued

Rank	Article Title	Total Citations	Citation Density
26	Sitler M, Ryan J, Wheeler B, et al. The efficacy of a semirigid ankle stabilizer to reduce acute ankle injuries in basketball: A randomized clinical study at West Point. <i>Am J Sports Med</i> 1994;22:454-461.	162	6.00
27	Manzi V, D'Ottavio S, Impellizzeri F, Chaouachi A, Chamari K, Castagna C. Profile of weekly training load in elite male professional basketball players. <i>J Strength Condit Res</i> 2010;24:1399-1406.	160	14.55
28	Wilson MR, Vine SJ, Wood G. The influence of anxiety on visual attentional control in basketball free throw shooting. <i>J Sport Exer Psychol</i> 2009;31:152-168.	156	13.00
29	Borowski LA, Yard EE, Fields SK, Comstock RD. The epidemiology of US high school basketball injuries, 2005-2007. <i>Am J Sports Med</i> 2008;36:2328-2335.	149	11.46
30	Narazaki K, Berg K, Stergiou N, Chen B. Physiological demands of competitive basketball. <i>Scand J Med Sci Sports</i> 2009;19:425-432.	143	11.92
31	Matavulj D, Kukolj M, Ugarkovic D, Tihanyi J, Jaric S. Effects of plyometric training on jumping performance in junior basketball players. <i>J Sports Med Phys Fitness</i> 2001;41:159-164.	142	7.10
32	Button C, MacLeod M, Sanders R, Coleman S. Examining movement variability in the basketball free-throw action at different skill levels. <i>Res Q Exerc Sport</i> 2003;74:257-269.	141	7.83
33	Leppanen, M; Pasanen, K; Kujala, UM, et al. Stiff landings are associated with increased ACL injury risk in young female basketball and floorball players. <i>Am J Sports Med</i> 2017;45:386-393.	138	34.50
34	Simenz CJ, Dugan CA, Ebben WP. Strength and conditioning practices of National Basketball Association strength and conditioning coaches. <i>J Strength Condit Res</i> 2005;19:495.	137	8.56
35	Bourbousson J, Sève C, McGarry T. Space—time coordination dynamics in basketball: Part 2. The interaction between the two teams. <i>J Sports Sci</i> 2010;28:349-358.	136	12.36
36	Nemhauser GL, Trick MA. Scheduling a major college basketball conference. <i>Oper Res</i> 1998;46:1-8.	134	5.83
37	Mihata LCS, Beutler AI, Boden BP. Comparing the incidence of anterior cruciate ligament injury in collegiate lacrosse, soccer, and basketball players: Implications for anterior cruciate ligament mechanism and prevention. <i>Am J Sports Med</i> 2006;34:899-904.	131	8.73
38	Montgomery PG, Pyne DB, Hopkins WG, Dorman JC, Cook K, Minahan CL. The effect of recovery strategies on physical performance and cumulative fatigue in competitive basketball. <i>J Sports Sci</i> 2008;26:1135-1145.	130	10.00
39	Labella CR, Smith BW, Sigurdsson A. Effect of mouthguards on dental injuries and concussions in college basketball. <i>Med Sci Sports Exer</i> 2002;34:41-44.	129	6.79
40	Hoare DG. Predicting success in junior elite basketball players—the contribution of anthropometric and physiological attributes. <i>J Sci Med Sport</i> 2000;3:391-405.	129	9.92
41	Stojanovic, E; Stojiljkovic, N; Scanlan, AT; Dalbo, VJ; Berkelmans, DM; The activity demands and physiological responses encountered during basketball match-play: A systematic review. <i>Sports Med</i> 2018;48:111-135.	129	43.00
42	Agel J, Olson DE, Dick R, Arendt EA, Marshall SW, Sikka RS. Descriptive epidemiology of collegiate women's basketball injuries: National Collegiate Athletic Association Injury Surveillance System, 1988-1989 through 2003-2004. <i>J Athl Train</i> 2007;42:202-210.	128	9.14
43	Dick R, Hertel J, Agel J, Grossman J, Marshall SW. Descriptive epidemiology of collegiate men's basketball injuries: National Collegiate Athletic Association Injury Surveillance System, 1988-1989 through 2003-2004. <i>J Athl Train</i> 2007;42:194-201.	128	9.14
44	Matthew D, Delextrat A. Heart rate, blood lactate concentration, and time—motion analysis of female basketball players during competition. <i>J Sports Sci</i> 2009;27:813-821.	126	10.50
45	Spiteri, T; Nimphius, S; Hart, NH; Specos, C; Sheppard, JM; Newton, RU. Contribution of strength characteristics to change of direction and agility performance in female basketball athletes. <i>J Strength Condit Res</i> 2014;28:2415-2423.	124	17.71
46	Cook JL, Khan KM, Kiss ZS, Griffiths L. Patellar tendinopathy in junior basketball players: A controlled clinical and ultrasonographic study of 268 patellar tendons in players aged 14-18 years. <i>Scand J Med Sci Sports</i> 2000;10:216-220.	123	5.86
47	Longo UG, Loppini M, Berton A, Marinozzi A, Maffulli N, Denaro V. The FIFA 11+ Program is effective in preventing injuries in elite male basketball players: A cluster randomized controlled trial. <i>Am J Sports Med</i> 2012;40:996-1005.	123	13.67
48	Maffiuletti NA, Gometti C, Amiridis IG, Martin A, Pousson M, Chatard J-C. The effects of electromyostimulation training and basketball practice on muscle strength and jumping ability. <i>Int J Sports Med</i> 2000;21:437-443.	122	5.81
49	Meeuwisse WH, Sellmer R, Hagel BE. Rates and risks of injury during intercollegiate basketball. <i>Am J Sports Med</i> 2003;31:379-385.	118	6.56
50	Delorme N, Raspaud M. The relative age effect in young French basketball players: A study on the whole population. <i>Scand J Med Sci Sports</i> 2009;19:235-242.	116	9.67

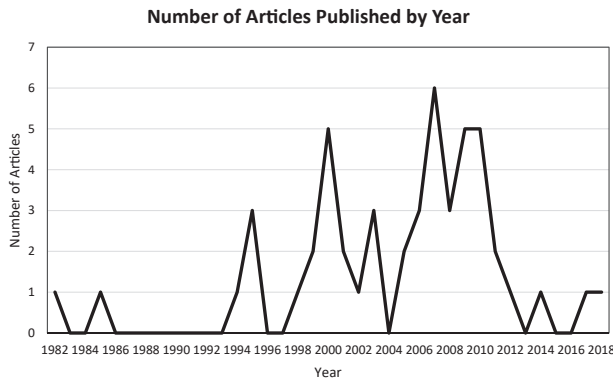


Fig 1. Number of articles published by year. Top 50 most cited basketball articles published by year.

Bibliometric citation analyses provide a quantitative method of investigating the impact of scientific articles by analyzing the number of citations. Articles with a high number of citations are often considered the most influential articles in a particular field.¹⁶ Researchers use citation analyses to identify which subtopics are of most interest to fellow investigators, to learn from high-yield articles in an unfamiliar field, and to help students and novice researchers gain foundational knowledge about a topic. These analyses have been widely used in medicine.¹⁷⁻³⁰ Similar analyses have been performed in the fields of ecology,³¹ biotechnology,^{32,33} medical education,³⁴ soccer,³⁵ and various others.³⁶⁻³⁹ The purpose of this study was to identify the 50 most highly cited research publications in the sport of basketball. The hypothesis of this study was that articles with medicine-related topics would be highly cited.

Methods

Given the public nature of these data, institutional review board approval was deemed exempt by our institutional review board. As described in similar studies conducting bibliometric analyses of orthopedic literature, the Clarivate Analytics Web of Knowledge database was used to gather data and metrics.⁴⁰⁻⁴⁷ The database was queried on December 14, 2021. All articles containing the word “basketball” in the title were isolated. No date, language, journal, or country of origin restrictions were placed on this search.

This search yielded 2,704 total articles, which were sorted in descending order based on the number of citations. The title and abstract of each article were then reviewed in order to determine its relevance to basketball. Only articles that had basketball as the focus of the study were included. For experimental studies, this was defined as articles that presented independent data for basketball players. If a study was unclear or if there were a question as to whether it should be excluded, the full article was obtained and reviewed by

two independent authors to ultimately decide upon inclusion or exclusion. Duplicate studies were removed.

A total of 56 articles were reviewed in order to reach the 50 most cited studies that met the inclusion criteria. These 50 studies were reviewed by two authors to obtain the following information: author name, publication year, country of origin (determined by first author affiliation), journal name, category of research (original research, review article, case study, short communication/technical report, letter to the editors, point-counterpoint, editorial, or thesis), main research topic area (physiology, biomechanics, nutrition, training and testing, sports medicine, performance analysis, sport psychology, coaching, or social sciences), and the level of evidence for clinical articles based on the guidelines published by The Centre for Evidence-Based Medicine (CEBM).⁴⁸ The level of evidence was determined by a consensus opinion between the second and third authors, both of which are medical students with research experience who were instructed on how to classify studies by the physicians on this study. If there was still a question of classification, the senior author, an experienced orthopedic surgeon specialized in sports medicine, was consulted. For articles classified as original research, the type of study (observational or experimental), gender of study participants (male, female, or both), competitive level of participants (elite, non-elite, or both), and the age group of participants (youth, adult, or all) were determined. An elite competitive level included participants who were classified as either semi-professional or professional athletes. Youth, high school, college, and recreational basketball players were classified as non-elite. If an article incorporated a systematic approach to reviewing the literature or if a meta-analysis were performed, the article was classified in the “review article” category. The citation density, which represents the number of citations per year since publication for each of the 50 studies, was also calculated and recorded.

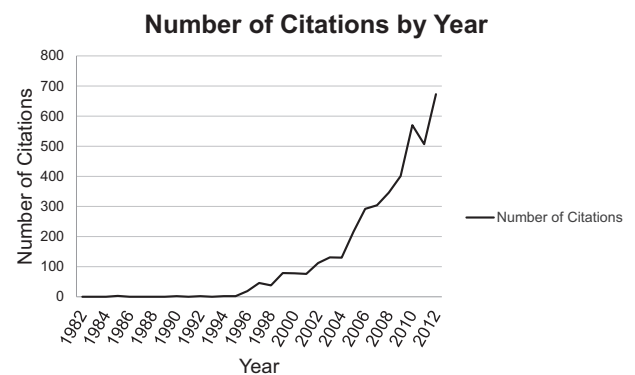


Fig 2. Number of citations by year. Total number of citations generated by the top 50 most cited basketball articles by year.

Number of Articles by Country of Origin

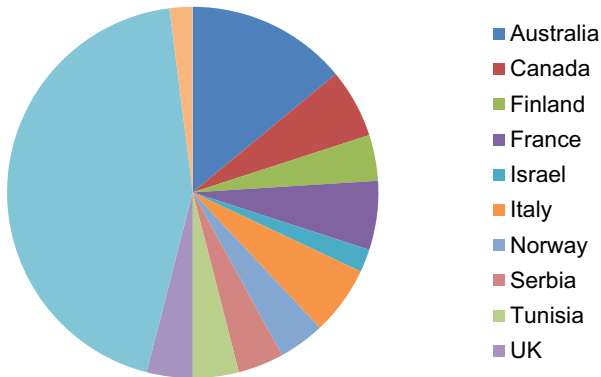


Fig 3. Number of articles by country of origin. Number of top 50 cited basketball articles by the country of origin.

Results

Table 1 lists the 50 most cited articles in basketball research. The number of citations per article ranged from 1,017 to 116. The average number of citations was 242.9, while the median was 164.5. The 50 most cited articles rank, article title, total citations, and citation density are listed in Table 1. Characteristics of these 50 articles are analyzed in Figs 1-4. The number of articles published by year (Fig 1), the number of citations per year (Fig 2), country of origin (Fig 3), and level of evidence (Fig 4) are highlighted.

Of the 50 articles shown in Table 1, 37 articles were original research articles, 12 were review articles, and 1 was a short communication/technical document. Four authors published more than one article included in this list. Three of these authors published two articles (Agel, LaBella, and Abdelkrim), while one author published three (Montgomery). The number of articles published in each journal is listed in Table 2, while the top 20 most cited articles since 2013 are listed in Table 3.

Of the 37 original research articles in our study, 16 were experimental, while 21 were observational. In the original research articles, the investigators conducted their

Number of Articles vs. Level of Evidence

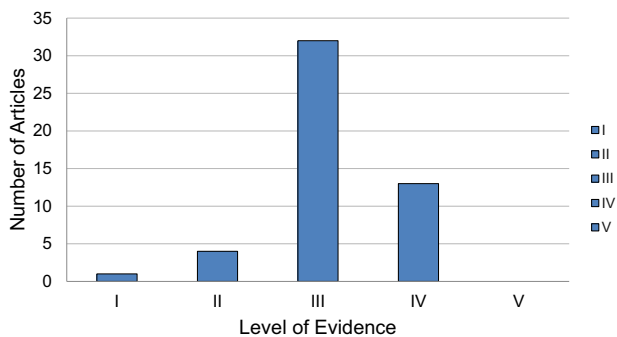


Fig 4. Number of articles versus level of evidence. The number of top 50 basketball articles by level of evidence.

research with male participants (17), female participants (6), or a combination of both male and female participants (14). This research investigated both elite and non-elite competition levels, with non-elite settings being more common (22 to 15). The investigators also conducted these studies with youth and adult groups, with 24 of the studies involving adults and 13 involving youth.

The top 50 most cited articles in basketball covered a variety of different topics. The most common topic of research was sports medicine with 20 articles. The second most common area of research was physiology with 11 articles. Other topics included performance analysis (7), biomechanics (4), coaching (2), training and testing (2), sports psychology (2), and social sciences (2). Ten of the top 50 articles focused on knee-related topics. These articles had an average citation density of 22.1. Of the articles with the 9 highest citation densities, 6 analyzed the knee. Anterior cruciate ligament injuries made up 6 of the 10 knee-related articles. Three articles examined ankle injuries and had an average citation density of 11.9. One article focused on oral injuries and had a citation density of 6.32. No publications exclusively investigated injuries of the upper extremities or trunk.

Discussion

The majority of the research articles included in the top 50 were focused on medicine-related topics. With such a heavy focus on medicine, sports medicine doctors and physicians who treat basketball players could benefit from a study of the articles in our analysis. When the

Table 2. The Top 50 Cited Basketball Journals of Origin

Journal of Origin	Number of Articles
<i>American Journal of Sports Medicine</i>	13
<i>Journal of Strength and Conditioning Research</i>	5
<i>Journal of Sports Sciences</i>	4
<i>Journal of Athletic Training</i>	3
<i>Scandinavian Journal of Medicine & Science in Sports</i>	3
<i>Medicine and Science in Sports and Exercise</i>	2
<i>British Journal of Sports Medicine</i>	2
<i>Clinical Journal of Sports Medicine</i>	2
<i>International Journal of Sports Medicine</i>	2
<i>Sports Medicine</i>	2
<i>Archives of Pediatric & Adolescent Medicine</i>	1
<i>British Medical Journal</i>	1
<i>International Journal of Sports Physiology and Performance</i>	1
<i>Journal of Orthopaedic & Sports Physical Therapy</i>	1
<i>Journal of Science and Medicine in Sport</i>	1
<i>Journal of Sport & Exercise Psychology</i>	1
<i>Journal of Sports Medicine and Physical Fitness</i>	1
<i>Nature Neuroscience</i>	1
<i>Operations Research</i>	1
<i>Research Quarterly for Exercise and Sport</i>	1
<i>Sleep</i>	1
<i>Journal of Applied Psychology</i>	1

Table 3. The Top 20 Most Cited Basketball Articles Since 2013

Rank	Article Title	Total Citations	Citation Density
1	Leppänen M, Pasanen K, Kujala UM, et al. Stiff landings are associated with increased ACL injury risk in young female basketball and floorball players. <i>Am J Sports Med</i> 2017;45:386-393. https://doi.org/10.1177/0363546516665810 .	138	34.50
2	Stojanović E, Stojiljković N, Scanlan AT, Dalbo VJ, Berkelmans DM, Milanović Z. The activity demands and physiological responses encountered during basketball match-play: A systematic review. <i>Sports Med</i> 2018;48:111-135. https://doi.org/10.1007/s40279-017-0794-z .	129	43.00
3	Spiteri T, Nimphius S, Hart NH, Specos C, Sheppard JM, Newton RU. Contribution of strength characteristics to change of direction and agility performance in female basketball athletes. <i>J Strength Cond Res</i> 2014;28:2415-2423. https://doi.org/10.1519/JSC.0000000000000547 .	124	17.71
4	Amin NH, Old AB, Tabb LP, Garg R, Toossi N, Cerynik DL. Performance outcomes after repair of complete Achilles tendon ruptures in National Basketball Association players. <i>Am J Sports Med</i> 2013;41:1864-1868. https://doi.org/10.1177/0363546513490659 .	97	12.13
5	Siebenrock KA, Behning A, Mamisch TC, Schwab JM. Growth plate alteration precedes cam-type deformity in elite basketball players. <i>Clin Orthop Relat Res</i> 2013;471:1084-1091. https://doi.org/10.1007/s11999-012-2740-6 .	98	12.25
6	Torres-Unda J, Zarrazquin I, Gil J, et al. Anthropometric, physiological and maturational characteristics in selected elite and non-elite male adolescent basketball players. <i>J Sports Sci</i> 2013;31:196-203. https://doi.org/10.1080/02640414.2012.725133 .	108	13.50
7	Spiteri T, Newton RU, Binetti M, Hart NH, Sheppard JM, Nimphius S. Mechanical determinants of faster change of direction and agility performance in female basketball athletes. <i>J Strength Cond Res</i> 2015;29:2205-2214. https://doi.org/10.1519/JSC.0000000000000876 .	89	14.83
8	Scanlan AT, Wen N, Tucker PS, Dalbo VJ. The relationships between internal and external training load models during basketball training. <i>J Strength Cond Res</i> 2014;28:2397-2405. https://doi.org/10.1519/JSC.0000000000000458 .	86	12.29
9	Sampaio J, McGarry T, Calleja-González J, Sáiz Schelling I, Del Alcázar X, Balciunas M. Exploring game performance in the National Basketball Association using player tracking data. <i>PLoS ONE</i> 2015;10:e0132894. https://doi.org/10.1371/journal.pone.0132894 .	82	13.67
10	Gómez MA, Lorenzo A, Ibañez SJ, Sampaio J. Ball possession effectiveness in men's and women's elite basketball according to situational variables in different game periods. <i>J Sports Sci</i> 2013;31:1578-1587. https://doi.org/10.1080/02640414.2013.792942 .	88	11.00
11	Fox JL, Scanlan AT, Stanton R. A review of player monitoring approaches in basketball: Current trends and future directions. <i>J Strength Cond Res</i> 2017;31:2021-2029. https://doi.org/10.1519/JSC.0000000000001964 .	78	19.50
12	Conte D, Favero TG, Lupo C, Francioni FM, Capranica L, Tessitore A. Time-motion analysis of Italian elite women's basketball games: Individual and team analyses. <i>J Strength Cond Res</i> 2015;29:144-150. https://doi.org/10.1519/JSC.0000000000000633 .	69	11.50
13	Torres-Ronda L, Ric A, Llabres-Torres I, de Las Heras B, Schelling I, Del Alcazar X. Position-dependent cardiovascular response and time-motion analysis during training drills and friendly matches in elite male basketball players. <i>J Strength Cond Res</i> 2016;30:60-70. https://doi.org/10.1519/JSC.0000000000001043 .	68	13.60
14	Schelling X, Torres L. Accelerometer load profiles for basketball-specific drills in elite players. <i>J Sports Sci Med</i> 2016;15:585-591.	67	13.40
15	García J, Ibañez SJ, De Santos RM, Leite N, Sampaio J. Identifying basketball performance indicators in regular season and playoff games. <i>J Hum Kinet</i> 2013;36:161-168. https://doi.org/10.2478/hukin-2013-0016 .	74	9.25
16	Puente C, Abián-Vicén J, Areces F, López R, Del Coso J. Physical and physiological demands of experienced male basketball players during a competitive game. <i>J Strength Cond Res</i> 2017;31:956-962. https://doi.org/10.1519/JSC.0000000000001577 .	65	16.25
17	Rodríguez-Rosell D, Mora-Custodio R, Franco-Márquez F, Yáñez-García JM, González-Badillo JJ. Traditional vs. sport-specific vertical jump tests: Reliability, validity, and relationship with the legs strength and sprint performance in adult and teen soccer and basketball players. <i>J Strength Cond Res</i> 2017;31:196-206. https://doi.org/10.1519/JSC.0000000000001476 .	61	15.25
18	Mangine GT, Hoffman JR, Wells AJ, et al. Visual tracking speed is related to basketball-specific measures of performance in NBA players. <i>J Strength Cond Res</i> 2014;28:2406-2414. https://doi.org/10.1519/JSC.0000000000000550 .	65	9.29
19	Fox JL, Stanton R, Scanlan AT. A comparison of training and competition demands in semiprofessional male basketball players. <i>Res Q Exerc Sport</i> 2018;89:103-111. https://doi.org/10.1080/02701367.2017.1410693 .	61	20.33
20	Klusemann MJ, Pyne DB, Hopkins WG, Drinkwater EJ. Activity profiles and demands of seasonal and tournament basketball competition. <i>Int J Sports Physiol Perform</i> 2013;8:623-629. https://doi.org/10.1123/ijsp.8.6.623 .	58	7.25

articles related to medicine were analyzed further, it became apparent that interest in knee-related injuries is high. Articles that examined injuries of other parts of the body, including ankle, mouth and shoulder injuries, were less prominent in our analysis. Knee injuries, particularly anterior cruciate ligament injuries, appear to be an area of high interest to current investigators.

Articles in our analysis originated from 13 different countries. Roughly half of all articles were published in the United States, and 35 were published in primarily English-speaking countries. The majority of other countries were European. In comparison, a soccer analysis from Brito et al. found that only 18% of the top 50 articles were published in the United States, while all other articles were published in Europe.³⁵ These findings may indicate a deficiency in the number of research articles available or simply a lack of interest in research from areas with little to no highly cited publications, such as in Asia. These results may also be explained by basketball's popularity in a given country.

Finally, the publications included were chosen on the basis of citation numbers alone. This metric, although useful in identifying articles with high levels of influence and utility, is influenced by a variety of factors and should not be used as the sole determinate of article impact. Citation density, among other factors, may be useful to researchers as they seek to obtain the most current view of influential research. Individuals using our analysis should also understand that articles not included in our analysis can be very impactful in their clinical practice and future research, and these articles should be explored further.

Limitations

A limitation to our study, and to bibliometric analysis in general, is the exclusion of newer publications. Newer publications did not have the time to accrue citations and, thus, were excluded from the top 50 articles. However, our analysis did include citation density statistics, which control for the effect of publication year. Further, we have included a table listing the top 20 most-cited articles since 2012 to include these newer articles. Another potential limitation of our study is that we only used one database. The use of other databases may result in slightly different results than our findings; however the Web of Knowledge database is commonly used in bibliometric analyses.⁴⁰⁻⁴⁷

Conclusion

A majority of the top 50 research articles were from English-speaking countries, published after 2000, primarily focused on medicine-related topics, and were Level III evidence. Publications examining knee injuries were the most highly cited and appear to be of high interest to current investigators. The prestige of an author's name appeared to be less influential to the number of citations.

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