

The 100 Most Cited Articles in Facial Trauma: A Bibliometric Analysis



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Purpose: The number of citations an article receives has been used as a marker of its influence within a surgical specialty. Currently, there is limited citation analysis in oral and maxillofacial trauma surgery. The purpose of this study was to determine the 100 most cited articles in facial trauma surgery and their characteristics.

Materials and Methods: Articles were identified from the Science Citation Index of the Institute for Scientific Information using the Thomson Reuters Web of Science search engine. All articles until 2015 were included. Then, the 100 most cited articles were assessed for title, author, journal, country of origin, and number of citations. A citation index (number of citations received per year) also was calculated.

Results: The 100 most cited articles in facial trauma received 9,933 citations (range, 66 to 297). They were published from 1942 through 2008, with 1990 through 1999 being the commonest decade. Articles were cited on average 4.6 times per year. Articles were published in 28 different journals, with impact factors ranging from 0.94 to 35.3. Most articles were observational research studies.

Conclusion: These findings reflect the attention that articles have received during the past half century in oral and maxillofacial trauma research, shedding light on often-read articles in this field. In addition to current bibliometric indices, it could provide a useful evidence base for facial surgeons, represent key educational material for aspiring trainees, and be used to help guide future research efforts.

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Traumatic facial injuries can have major functional, psychological, and esthetic implications, and their management represents a cornerstone in oral and maxillofacial surgery (OMS). The complexity of the craniofacial region and the diverse range of specialties that manage injuries within this region make it difficult to isolate the evidence base to modern practice in facial trauma. Influential studies within this subspecialty are an important facet of this evidence base because they enlighten surgeons as to how and why current practices have evolved. Therefore, identifying these studies from the surgical literature is beneficial to surgeons in this field.

However, establishing or measuring a scientific article's influence can be difficult. The number of times a

publication is cited is a potential marker that has been used to represent its influence. A citation can be described as an alphanumeric expression contained within the body of an intellectual work that recognizes the contributions of the works of others to the topic of discussion.¹ Its primary purpose is to acknowledge another researcher's previous work pertinent to the author's own argument. It follows that the importance of a published body of work is echoed in the quantity of citations it receives; conversely, the number of citations an article gathers is proportionate to its relevance within that arena.

Numerous specialties have collated lists of most frequently cited "classic" articles within their fields. These lists characterize seminal works that have

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steered advancements within individual specialties and provided an important evidence base for practicing surgeons. Orthopedics, urology, and plastic surgery are examples of specialties in the wider surgical community that have generated such compilations, and similar articles have become available within head and neck specialties, including cleft lip and palate, skull base surgery, and dentistry.²⁻⁷ This article looks at the citation history of published articles within the field of facial trauma, aiming to identify and characterize the most frequently cited articles in facial trauma surgery, thus establishing a potential “reading list” of key influential articles within this field.

Materials and Methods

The most frequently cited articles relevant to facial trauma were identified from the Science Citation Index of the Institute for Scientific Information (ISI) using the Thomson Reuters Web of Science search engine. The search strategy was *trauma* OR *fracture* OR *injury* associated with *craniofacial*, *facial*, *mandible/mandibular*, *midface*, and *orbit/ocular*. No limitation was applied to the search in subject category or journal. All articles published until 2015 were included. If journals had changed their names since the date of publication, then the most recent journal name was used.

Article abstracts were examined and articles not relevant to facial trauma were discarded. Then, the resulting most cited 100 articles were assessed for title, author, region of the author's institute, publishing journal, and number of citations. A citation index was created that evaluated the number of citations received per year since publication of the article. Data were analyzed using the Mann-Whitney test and deemed significant at a *P* value less than .05. Correlation was tested using the Pearson correlation coefficient.

Because this study did not use clinical information, ethical approval or patient permissions were not sought.

Results

The 100 most cited articles in facial trauma were cited a combined total of 9,933 times (mean, 99.3). The most cited work in facial trauma literature was the article by Smith and Regan⁸ on orbital floor blowout fractures, published in 1957, which was cited 297 times. The 100th most cited article was by Schön et al,⁹ published in 2002, which looked at endoscopic management of condylar fractures and received 66 citations. The earliest article was published in 1942 by Adams¹⁰ and was cited 91 times. The most recently published article was published in 2008 by Mueller

et al¹¹ and was cited 66 times. Table 1 lists the 100 most frequently cited articles in facial trauma in its entirety.

The mean number of authors for each article was 3.46 (range, 1 to 8). Articles originated throughout the world, including North America, Europe, Asia, and Australasia (Fig 1).

Articles were published in 28 different journals (Table 2). Articles appeared most commonly in the *Journal of Oral and Maxillofacial Surgery* (20) and *Plastic and Reconstructive Surgery* (20). Overall, 40 articles appeared in OMS-related journals, 24 in plastic surgery journals, followed by ophthalmology journals (13), surgery journals (8), dental journals (7), and other journals (8).

Journal impact factor (IF) was available for 95 journals. They ranged from 0.94 to 35.3 (mean, 3.04). There was no correlation between citation number and the IF of its publishing journal ($R = 0.05$). The most common decades for publication were 1990 through 1999 (37 articles; Fig 2). There was a weak correlation between number of citations and time since publication ($R = 0.337$).

Eighty-four articles in the list were original research articles, of which 4 were randomized controlled trials or meta-analyses, 6 were laboratory based, and 1 was a technical note. The remaining 16 articles were reviews. Eleven articles were related to facial trauma in children. A breakdown of topics addressed in articles is presented in Figure 3.

The citation index was created to represent the number of annual citations since publication. Articles were published on average 4.6 times per year (range, 1.3 to 16.3). The article with the highest citation index was by Gassner et al,¹² a 10-year review of craniofacial trauma (2003), which was cited 16.3 times each year. Articles also were ranked according to their citation index. No notable correlation existed between absolute number of citations and citation index ($R = 0.235$). A moderate negative correlation between the citation index and time since publication was noted ($R = -0.653$).

Discussion

Scientific articles are cited because of their relevance to future work, the overall quality of research presented, or as inspiration for change in clinical practice. Therefore, the present analysis of frequently cited articles and the journals in which they appeared serves 3 purposes. First, it identifies and emphasizes the impact of the work of the subspecialty on recent advances and places these in a historical perspective. Second, it sheds light on clinical and scientific evolution within the field and discloses quantitative information about authors, topics, and journals that have

Table 1. THE 100 MOST CITED ARTICLES IN FACIAL TRAUMA

Rank	Lead Author	Title	Citation Number	Citation Index	Citation Index Rank
1	Smith ⁸	Blow-out fracture of orbit: mechanism and correction of internal orbital fracture	297	5.12	31
2	Converse ¹³	Orbital blowout fractures—a 10-year survey	208	4.33	47
3	Anderson ¹⁴	Optic nerve blindness following blunt forehead trauma	208	6.30	14
4	Gassner ¹²	Craniofacial trauma—a 10-yr review of 9543 cases with 21067 injuries	195	16.25	1
5	Manson ^{15,*}	Studies on enophthalmos. 2. The measurement of orbital injuries and their treatment by quantitative computed-tomography	176	6.07	19
6	Zide ^{16,*}	Indications for open reduction of mandibular condyle fractures	176	5.50	29
7	Putterman ¹⁷	Nonsurgical management of blow-out fractures of orbital floor	156	3.80	56
8	Cutright ¹⁸	Repair of fractures of orbital floor using biodegradable polylactic acid	152	3.53	63
9	Bite ^{19,*}	Orbital volume measurements in enophthalmos using 3-dimensional CT imaging	152	5.07	34
10	Haug ²⁰	An epidemiological survey of facial fractures and concomitant injuries	152	6.08	18
11	Manson ^{21,*}	Mechanisms of global support and posttraumatic enophthalmos. 1. The anatomy of the ligament sling and its relation to intramuscular cone orbital fat	143	4.93	38
12	Gellrich ^{22,*}	Computer-assisted secondary reconstruction of unilateral posttraumatic orbital deformity	135	10.38	3
13	Converse ^{23,*}	Enophthalmos and diplopia in fractures of the orbital floor	134	2.31	92
14	Olson ²⁴	Fractures of the mandible—a review of 580 cases	132	4.00	52
15	Ellis ²⁵	An analysis of 2067 cases of zygomatico-orbital fracture	130	4.33	48
16	Quinn ²⁶	A randomized controlled trial comparing a tissue adhesive with suturing in the repair of pediatric facial lacerations	129	5.86	23
17	Schein ²⁷	The spectrum and burden of ocular injury	122	4.52	45
18	Posnick ²⁸	pediatric facial fractures—evolving patterns of treatment	115	5.23	30

Table 1. Cont'd

Rank	Lead Author	Title	Citation Number	Citation Index	Citation Index Rank
19	Cook ²⁹	Traumatic optic neuropathy—a meta-analysis	114	6.00	20
20	Burnstine ^{30,*}	Clinical recommendations for repair of isolated orbital floor fractures—an evidence-based analysis	114	8.77	7
21	Manson ^{31,*}	midface fractures—advantages of immediate extended open reduction and bone grafting	113	3.77	57
22	Zingg ³²	Classification and treatment of zygomatic fractures—a review of 1,025 cases	113	4.91	39
23	Romano ³³	Use of Medpor porous polyethylene implants in 140 patients with facial fractures	112	5.09	32
24	Hawes ³⁴	Surgery of orbital floor fractures—influence of time of repair and fracture size	112	3.50	64
25	Tessier ^{35,*}	The conjunctival approach to the orbital floor and maxilla in congenital malformation and trauma	110	2.62	84
26	Gruss ^{36,*}	The importance of the zygomatic arch in complex midfacial fracture repair and correction of post-traumatic orbitozygomatic deformities	109	4.36	46
27	Jordan ³⁷	Complications associated with alloplastic implants used in orbital fracture repair	106	4.61	43
28	Gruss ^{38,*}	Complex maxillary fractures—role of buttress reconstruction and immediate bone grafts	104	3.59	61
29	Emery ³⁹	Orbital floor fractures—long-term follow-up of cases with and without surgical repair	104	2.36	90
30	Maclennan ⁴⁰	Consideration of 180 cases of typical fractures of the mandibular condylar process	104	1.65	96
31	Lindahl ⁴¹	Condylar fractures of mandible. 2. Radiographic study of remodeling processes in temporomandibular joint	104	2.74	81
32	Manson ^{42,*}	Towards CT based facial fracture treatment	102	4.08	51
33	Burm ⁴³	Pure orbital blowout fracture: new concepts and importance of medial orbital blowout fracture	102	6.38	13
34	Whitehouse ^{44,*}	Predication of enophthalmus by computed tomography after blow-out orbital fracture	102	4.86	40

Table 1. Cont'd					
Rank	Lead Author	Title	Citation Number	Citation Index	Citation Index Rank
35	Proffit ⁴⁵	Early fracture of the mandibular condyles—frequently an unsuspected cause of growth disturbances	102	2.91	77
36	Ellis ^{46,*}	Assessment of internal orbital reconstructions for pure blowout fractures: cranial bone grafts versus titanium mesh	102	8.50	8
37	Dahlstrom ⁴⁷	15 Years follow up of condylar fractures	101	3.88	54
38	Ellis ⁴⁸	Treatment of mandibular angle fractures using one noncompression miniplate	96	5.05	35
39	Jordan ⁴⁹	Intervention within days for some orbital floor fractures: the white-eyed blowout	95	5.59	27
40	Zachariades ⁵⁰	Fractures of the mandibular condyle: a review of 466 cases, literature review, reflections on treatment and proposals	95	10.56	2
41	Motamedi ⁵¹	An assessment of maxillofacial fractures: a 5-year study of 237 patients	94	7.83	9
42	Kaban ⁵²	Facial fractures in children—analysis of 122 fractures in 109 patients	93	2.45	89
43	Ellis ⁵³	Occlusal results after open or closed treatment of fractures of the mandibular condylar process	92	6.13	15
44	Koornneef ⁵⁴	Current concepts on the management of orbital blow-out fractures	92	2.79	80
45	Manson ^{55,*}	Structural pillars of the facial skeleton—an approach to management of Le Fort fractures	91	2.60	85
46	Mcgraw ⁵⁶	Pediatric maxillofacial trauma—age-related variations in injury	91	3.64	59
47	Adams ¹⁰	Internal wiring fixation of facial fractures	91	1.25	100
48	Luce ⁵⁷	Review of 1000 major facial fractures and associated injuries	90	2.50	86
49	Eckelt ^{58,*}	Open versus closed treatment of fractures of the mandibular condylar process—a prospective randomized multicenter study	90	10.00	4
50	Ellis ^{59,*}	Treatment methods for fractures of mandibular angle	89	5.56	28

Table 1. Cont'd

Rank	Lead Author	Title	Citation Number	Citation Index	Citation Index Rank
51	Gruss ^{60,*}	Naso-ethmoid-orbital fractures—classification and role of primary bone-grafting	89	2.97	75
52	Haug ⁶¹	Maxillofacial injuries in the pediatric patient	89	5.93	21
53	Ferreira Brasileiro ⁶²	Epidemiological analysis of maxillofacial fractures in Brazil: a 5-year prospective study	88	9.78	5
54	Hussain ⁶³	A comprehensive analysis of craniofacial trauma	87	4.14	49
55	Ellis ⁶⁴	Surgical complications with open treatment of mandibular condylar process fractures	86	5.73	26
56	Klopfert ⁶⁵	Ocular trauma in United States—eye injuries resulting in hospitalization, 1984 through 1987	86	3.74	58
57	Markowitz ^{66,*}	Management of the medial canthal tendon in naso-ethmoid orbital fractures—the importance of central fragment in classification and treatment	86	3.58	62
58	Lindahl ⁶⁷	Condylar fractures of mandible. 1. Classification and relation to age, occlusion, and concomitant injuries of teeth and teeth-supporting structures	86	2.26	93
59	Takenoshita ⁶⁸	Comparison of functional recovery after nonsurgical and surgical treatment of condylar fractures	86	3.44	65
60	Gassner ⁶⁹	Cranio-maxillofacial trauma in children: a review of 3,385 cases with 6,060 injuries in 10 year	85	7.73	10
61	Iida ⁷⁰	Retrospective analysis of 1502 patients with facial fractures	83	5.93	22
62	Kawamoto ^{71,*}	Late post-traumatic enophthalmus—a correctable deformity	82	2.48	87
63	Tessier ⁷²	Total osteotomy of middle third of face for faciostenosis or for sequelae of Le Fort III fractures	80	1.82	95
64	Kroon ⁷³	The use of miniplates in mandibular fractures—an in vitro study	80	3.33	66
65	Alqurainy ^{74,*}	The characteristics of midfacial fractures and association with ocular injury—a prospective study	80	3.33	67

Table 1. Cont'd					
Rank	Lead Author	Title	Citation Number	Citation Index	Citation Index Rank
66	Iizuka ⁷⁵	Infection after rigid internal fixation of mandibular fractures—a clinical and radiologic study	80	3.33	68
67	Hills ⁷⁶	Head injury and facial injury—is there an increased risk of cervical spine injury	80	3.64	60
68	Walker ⁷⁷	Traumatic mandibular condylar fracture dislocations—effect on growth in the Macaca rhesus monkey	79	1.44	98
69	Vanhoof ⁷⁸	Different patterns of fractures of facial skeleton in 4 European countries	79	2.08	94
70	Thompson ⁷⁹	Effectiveness of bicycle safety helmets in preventing serious facial injury	78	4.11	50
71	Bos ⁸⁰	Bio-absorbable plates and screws for internal fixation of mandibular fractures—a study in 6 dogs	78	3.00	73
72	Palmieri ⁸¹	Mandibular motion after closed and open treatment of unilateral mandibular condylar process fractures	77	4.81	41
73	Benson ⁸²	Head and neck injuries in ice hockey players wearing full face shields vs half-face shields	77	4.81	42
74	Zingg ⁸³	Treatment of 813 zygoma—lateral orbital complex fractures—new aspects	75	3.13	71
75	Silvennoinen ⁸⁴	Different patterns of condylar fractures—an analysis of 382 patients in a 3-year period	75	3.26	69
76	Gruss ^{85,*}	The role of primary bone grafting in complex craniomaxillofacial trauma	74	2.47	88
77	Holt ⁸⁶	Incidence of eye injuries in facial fractures. An analysis of 727 cases	74	2.31	91
78	Hogg ⁸⁷	Epidemiology of maxillofacial injuries at trauma hospitals in Ontario, Canada, between 1992 and 1997	74	4.93	37
79	Alvi ⁸⁸	Facial fractures and concomitant injuries in trauma patients	73	6.08	16
80	Smith ⁸⁹	A randomized controlled trial of a brief intervention after alcohol-related facial injury	73	6.08	17
81	Hagan ⁹⁰	An analysis of 319 case reports of mandibular fractures	72	1.33	99

Table 1. Cont'd

Rank	Lead Author	Title	Citation Number	Citation Index	Citation Index Rank
82	Appling ⁹¹	Transconjunctival approach vs subciliary skin muscle flap approach for orbital fracture repair	71	3.23	70
83	Hlawitschka ⁹²	Functional and radiologic results of open and closed treatment of intracapsular (diacapitular) condylar fractures of the mandible	71	7.10	12
84	Konstantinovic ⁹³	Surgical versus conservative treatment of unilateral condylar process fractures—clinical and radiographic evaluation of 80 patients	70	3.04	72
85	Haug ⁹⁴	Outcomes of open versus closed treatment of mandibular subcondylar fractures	70	5.00	36
86	Moberg ⁹⁵	Metal release from plates used in jaw fracture treatment—a pilot study	70	2.69	82
87	Burnstine ⁹⁶	Clinical recommendations for repair of orbital facial fractures	70	5.83	24
88	Iizuka ⁹⁷	Rigid internal fixation of mandibular fractures—an analysis of 270 fractures treated using AO ASIF method	69	3.00	74
89	Egbert ⁹⁸	Pediatric orbital floor fracture—direct extraocular muscle involvement	69	4.60	44
90	Ogundare ⁹⁹	Pattern of mandibular fractures in an urban major trauma center	69	5.75	25
91	Rowe ¹⁰⁰	Fractures of the facial skeleton in children	69	1.47	97
92	Telfer ¹⁰¹	Trends in etiology of maxillofacial fractures in United Kingdom (1977-1987)	68	2.83	78
93	Conner ¹⁰²	Traumatic aneurysms of face and temple: a patient report and literature review, 1644 to 1998	68	4.00	53
94	Francel ¹⁰³	The fate of plates and screws after facial fracture reconstruction	68	2.96	76
95	Zimmermann ¹⁰⁴	Pediatric facial fractures: recent advances in prevention, diagnosis and management	68	7.56	11
96	Iizuka ¹⁰⁵	Severe bone-resorption and osteoarthritis after miniplate fixation of high condylar fractures—a clinical and radiologic study of 13 patients	67	2.79	79

Table 1. Cont'd

Rank	Lead Author	Title	Citation Number	Citation Index	Citation Index Rank
97	Hutchison ^{106,*}	The BAOMS United Kingdom survey of facial injuries part 1: aetiology and the association with alcohol consumption	66	3.88	55
98	Glassman ¹⁰⁷	Rigid fixation of internal orbital fractures	66	2.64	83
99	Mueller ¹¹	Injuries of the head, face, and neck in relation to ski helmet use	66	9.43	6
100	Schön ^{9,*}	Endoscopy-assisted open treatment of condylar fractures of mandible: extraoral vs intraoral approach	66	5.08	33

Abbreviations: BAOMS, British Association of Oral and Maxillofacial Surgeons; CT, computed tomography.

* Authors' opinions of most influential article in the list.

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facilitated this. Third, it has created a group of articles that can represent key educational curricula for aspiring OMS trainees.

Encouragingly, the list of articles created in this study features a number of influential authors and seminal topics. These include Burnstine's¹⁰⁸ work on the management of orbital floor fractures, several key cases series by Ellis,¹⁰⁹ and numerous pivotal articles by Manson and Gruss.^{15,21,30,31,36,38,42,46,64,85,110,111}

Table 1 indicates articles in the list that the authors believe represent key reading in the field of facial trauma.

The choice to investigate the 100 most frequently cited articles is somewhat arbitrary, but is in keeping with most similar studies in the wider medical literature and was chosen to remain consistent with these

studies. As with many "most-cited" lists in other fields, articles originated predominantly from North America. However, it is encouraging to note that there is a worldwide contribution to often-cited facial trauma literature. Although most articles on the list appeared in OMS journals, the range of journals and specialties that featured in this list was duly noted. The authors believe this represents the current and historic responsibilities various specialties have taken on within the field. The extent of cross-over among OMS, ophthalmology, and plastic surgery in particular should be noted, supporting the notion of use of multidisciplinary expertise in facial trauma management.

It is encouraging to note that several often-cited articles in the list, such as the effectiveness of bicycle helmets on the prevention of facial trauma by Thompson et al⁷⁹ and orbital floor repair by Hawes and Dortzbach,³⁴ were published in high-impact journals, such as the *Journal of the American Medical Association and Ophthalmology*. Although the IF has its drawbacks, it remains the most widely used tool to gauge overall journal impact, which was the reason for its inclusion in this study. However, it should be noted that the IF, defined as the average number of citations received per article published in that journal during the preceding 2 years, undergoes a yearly change. This study used 2014 IFs, which obviously do not reflect the historic IF values at the time of publication of many of these articles—indeed, the IF was introduced only in the early 1960s and would have entered widespread use only several years after the earlier published articles in this list.¹¹² In addition, it was

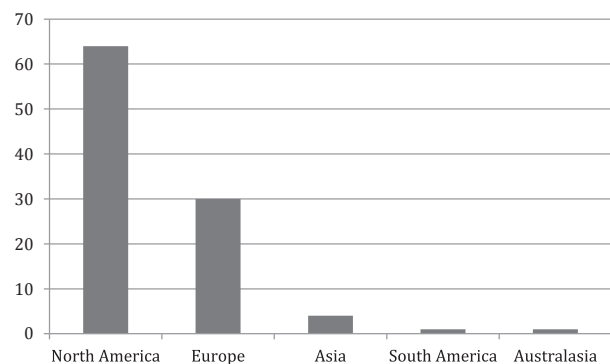


FIGURE 1. Region of author's institute for most cited articles.

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Table 2. COMPLETE LIST OF JOURNALS

Addiction
American Journal of Ophthalmology
American Journal of Orthodontics and Dentofacial Orthopedics
American Journal of Surgery
Annals of Emergency Medicine
Annals of Plastic Surgery
Archives of Ophthalmology
Archives of Otolaryngology-Head & Neck Surgery
British Journal of Ophthalmology
British Journal of Oral & Maxillofacial Surgery
British Journal of Plastic Surgery
Current Opinion in Ophthalmology
Epidemiology
International Journal of Oral and Maxillofacial Surgery
JAMA—Journal of the American Medical Association
Journal of Cranio-Maxillofacial Surgery
Journal of Craniofacial Surgery
Journal of Oral and Maxillofacial Surgery
Journal of Oral Surgery Anesthesia and Hospital Dental Service
Journal of Trauma-Injury Infection and Critical Care
Laryngoscope
Ophthalmic Plastic and Reconstructive Surgery
Ophthalmology
Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontics
Otolaryngology-Head and Neck Surgery
Plastic and Reconstructive Surgery
Surgery
Transactions of the American Academy of Ophthalmology and Otolaryngology

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interesting to note the lack of correlation between journal IF and article citation number—one would expect journals published in high-impact journals to be cited more often.

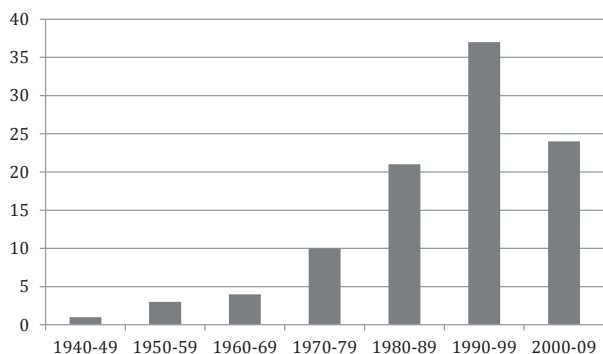


FIGURE 2. Year of publication of most cited articles.

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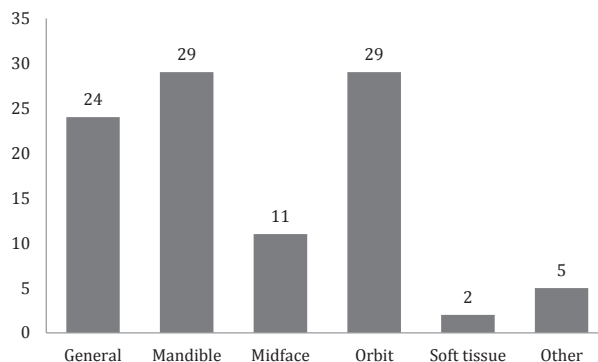


FIGURE 3. Topics covered in most cited articles.

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Along similar lines, Jafarzadeh et al¹¹³ published a list of frequently cited articles in dental and oral and maxillofacial traumatology, which complements this study well. Most articles (57%) discussed in their study were related to dental trauma, which was not the focus of the present analysis. However, encouragingly, they also found most articles were original research, with a similar percentage of review articles appearing. This finding is unusual, because the propensity for higher citation rates would typically lead review articles to feature more in a list such as this. Of the original articles in the present study, most were observational studies. Only 4 studies in the list represent level I evidence in the form of randomized controlled studies or meta-analyses. This finding is in keeping with a review of evidence published in the *British Journal of Oral and Maxillofacial Surgery* and the *International Journal of Oral and Maxillofacial Surgery* over a 10 year period, showing small numbers of randomized controlled trials published in OMS.¹¹⁴ The present study findings should encourage the OMS community to produce well-designed high-level research studies.

It was noted that the citation number for each article and the citation index values in this list were considerably lower than other specialties, meaning articles in this field were cited less often than in other specialties. For example, the range of citation numbers for the top 100 plastic surgery articles was 96 to 673, whereas the citation index ranged from 1.9 to 31.0.¹¹⁵ Although this could be attributed to overall specialty size, it is perhaps worrying that citation number and indices are lower compared with to subspecialty lists such as burns (citation number range, 104 to 746)¹¹⁶ or skull base surgery (115 to 487; citation index, 2.5 to 27.1).⁶

There are some limitations in this study. The authors used absolute number of citations as a proxy for quality. However, it might not follow that articles cited more often are more influential or vice versa. This is due to multiple sources of bias when using citation

number to rank articles. One key source of bias is related to time from publication—a relatively poor study published 50 years ago has the opportunity to be cited many more times than an excellent study published 2 years ago. Indeed, analysis of citation timelines have suggested that articles are typically first cited several years after publication, reaching their maximum quantity of citations over a period of 10 years after publication.¹¹⁷ This is relevant in the present study, which represents a snapshot of facial trauma research originating during the past 60 years. This 1) reinforces why no articles published in the past 5 years feature in this list and 2) explains the apparent decrease in featured articles from the past decade. Perhaps the increase noted in the previous 4 decades would continue if the authors were to repeat their analysis in 5 years' time. An increase in time since publication also leads to a bias known as *obliteration by incorporation*, a phenomenon in which, perhaps counterintuitively, seminal studies can become less cited over time as their content becomes absorbed into central dogma and knowledge becomes assumed without the need for referencing.¹¹⁸ This is particularly relevant in evolving specialties such as facial trauma and could explain why the article by Adams¹⁰ on internal wire fixation was not higher up in the list and why fewer older articles feature in the list.

Although the primary aim of this study was to identify the 100 articles with the most absolute citations, a citation index was created to accommodate the influence of time. This looked at the number of citations an article in the present list received per year since its publication. Interestingly, as with other similar articles,² there is minimal correlation between total citation number and citation index, with only 1 article in the top 10 of the present list in the top 10 when ranked by citations per year. When ranked by citation index, the top 3 articles were those by Gassner et al,¹² Gellrich et al,²² and Zachariades et al,⁵⁰ all published within the past 15 years. This is in keeping with the analysis of citation timelines discussed earlier.¹¹⁷ Similarly, with the expansion of academic publication in recent years, there is an ongoing increase in publication and citation rate, thus introducing further biases when using citations per year as a proxy for article influence.¹¹⁹

Other biases include citation accuracy, which has been investigated in OMS, and is certainly relevant to the methodology of this study.¹²⁰ Furthermore, the number of citations does not provide a context for how or why that article was referenced. Research can be cited not only for positive reasons but also because it is flawed or being refuted, thus skewing the data. Other factors affecting the relation between citation number and true quality of evidence includes journal self-citation, incomplete citing, and omission bias.

Selection bias also might have led to inaccuracies in the present data. Despite a wide-reaching search strategy, articles relating to specific or highly specialized aspects of facial trauma might have been omitted. Similarly, the search strategy used only the ISI Web of Knowledge database. Although a common database for studies such as this, it is not exhaustive and wider searches using other databases might have yielded other often-cited articles.

This study of the 100 most cited articles in facial trauma presents useful and interesting information about scientific communications in this specialist area. Observational studies in OMS journals constitute the most common type of highly cited publication. These findings reflect the attention that articles have received during the past half century. This information sheds light on often-read articles in this field and should, in addition to current bibliometric indices, provide a useful evidence base for facial surgeons and could be used to help guide future research efforts.

References

1. Raja M, Ravichandran T: Recognizing self-citations via citation quality analysis. *J Theor Appl Inf Technol* 69:113, 2014
2. Namdari S, Baldwin K, Kovatch K, et al: Fifty most cited articles in orthopedic shoulder surgery. *J Shoulder Elbow Surg* 21:1796, 2012
3. Zhang WJ, Li YF, Zhang JL, et al: Classic citations in main plastic and reconstructive surgery journals. *Ann Plast Surg* 71:103, 2013
4. Nason GJ, Tareen F, Mortell A: The top 100 cited articles in urology: An update. *Can Urol Assoc J* 7:E16, 2013
5. Mahon NA, Joyce CW: A bibliometric analysis of the 50 most cited papers in cleft lip and palate. *J Plast Surg Hand Surg* 49:52, 2015
6. Khan NR, Lee SL, Brown M, et al: Highly cited works in skull base neurosurgery. *World Neurosurg* 83:403, 2015
7. Hui J, Han Z, Geng G, et al: The 100 top-cited articles in orthodontics from 1975 to 2011. *Angle Orthod* 83:491, 2013
8. Smith B, Regan WF Jr: Blow-out fracture of the orbit; mechanism and correction of internal orbital fracture. *Am J Ophthalmol* 44:733, 1957
9. Schön R, Gutwald R, Schramm A, et al: Endoscopy-assisted open treatment of condylar fractures of the mandible: extraoral vs intraoral approach. *Int J Oral Maxillofac Surg* 31:237, 2002
10. Adams WM: Internal wiring fixation of facial fractures. *Surgery* 12:523, 1942
11. Mueller BA, Cummings P, Rivara FP, et al: Injuries of the head, face, and neck in relation to ski helmet use. *Epidemiology* 19:270, 2008
12. Gassner R, Tuli T, Hächl O, Rudisch A, Ulmer H: Cranio-maxillofacial trauma: a 10 year review of 9,543 cases with 21,067 injuries. *J Craniomaxillofac Surg* 31:51, 2003
13. Converse JM, Smith B, Obear MF, Wood-Smith D: Orbital blowout fractures: a ten-year survey. *Plast Reconstr Surg* 39:20, 1967
14. Anderson RL, Panje WR, Gross CE: Optic nerve blindness following blunt forehead trauma. *Ophthalmology* 89:445, 1982
15. Manson PN, Grivas A, Rosenbaum A, et al: Studies on enophthalmos: II. The measurement of orbital injuries and their treatment by quantitative computed tomography. *Plast Reconstr Surg* 77:203, 1986
16. Zide MF, Kent JN: Indications for open reduction of mandibular condyle fractures. *J Oral Maxillofac Surg* 41:89, 1983

17. Putterman AM, Stevens T, Urist MJ: Nonsurgical management of blow-out fractures of the orbital floor. *Am J Ophthalmol* 77:232, 1974
18. Cutright DE, Hunsuck EE: The repair of fractures of the orbital floor using biodegradable polylactic acid. *Oral Surg Oral Med Oral Pathol* 33:28, 1972
19. Bite U, Jackson IT, Forbes GS, Gehring DG: Orbital volume measurements in enophthalmos using three-dimensional CT imaging. *Plast Reconstr Surg* 75:502, 1985
20. Haug RH, Prather J, Indresano AT: An epidemiologic survey of facial fractures and concomitant injuries. *J Oral Maxillofac Surg* 48:926, 1990
21. Manson PN, Clifford CM, Su CT, et al: Mechanisms of global support and posttraumatic enophthalmos: I. The anatomy of the ligament sling and its relation to intramuscular cone orbital fat. *Plast Reconstr Surg* 77:193, 1986
22. Gellrich NC, Schramm A, Hammer B, et al: Computer-assisted secondary reconstruction of unilateral posttraumatic orbital deformity. *Plast Reconstr Surg* 110:1417, 2002
23. Converse JM, Smith B: Enophthalmos and diplopia in fractures of the orbital floor. *Br J Plast Surg* 9:265, 1957
24. Olson RA, Fonseca RJ, Zeitler DL, Osborn DB: Fractures of the mandible: a review of 580 cases. *J Oral Maxillofac Surg* 40:23, 1982
25. Ellis E 3rd, el-Attar A, Moos KF: An analysis of 2,067 cases of zygomatico-orbital fracture. *J Oral Maxillofac Surg* 43:417, 1985
26. Quinn JV, Drzewiecki A, Li MM, et al: A randomized, controlled trial comparing a tissue adhesive with suturing in the repair of pediatric facial lacerations. *Ann Emerg Med* 22:1130, 1993
27. Schein OD, Hibberd PL, Shingleton BJ, et al: The spectrum and burden of ocular injury. *Ophthalmology* 95:300, 1988
28. Posnick JC, Wells M, Pron GE: Pediatric facial fractures: evolving patterns of treatment. *J Oral Maxillofac Surg* 51:836, 1993
29. Cook MW, Levin LA, Joseph MP, Pinczower EF: Traumatic optic neuropathy. A meta-analysis. *Arch Otolaryngol Head Neck Surg* 122:389, 1996
30. Burnstine MA: Clinical recommendations for repair of isolated orbital floor fractures: an evidence-based analysis. *Ophthalmology* 109:1207, 2002
31. Manson PN, Crawley WA, Yaremchuk MJ, et al: Midface fractures: advantages of immediate extended open reduction and bone grafting. *Plast Reconstr Surg* 76:1, 1985
32. Zingg M, Laedrach K, Chen J, et al: Classification and treatment of zygomatic fractures: a review of 1,025 cases. *J Oral Maxillofac Surg* 50:778, 1992
33. Romano JJ, Iliff NT, Manson PN: Use of Medpor porous polyethylene implants in 140 patients with facial fractures. *J Craniofac Surg* 4:142, 1993
34. Hawes MJ, Dortzbach RK: Surgery on orbital floor fractures. Influence of time of repair and fracture size. *Ophthalmology* 90:1066, 1983
35. Tessier P: The conjunctival approach to the orbital floor and maxilla in congenital malformation and trauma. *J Maxillofac Surg* 1:3, 1973
36. Gruss JS, Van Wyck L, Phillips JH, Antonyshyn O: The importance of the zygomatic arch in complex midfacial fracture repair and correction of posttraumatic orbitozygomatic deformities. *Plast Reconstr Surg* 85:878, 1990
37. Jordan DR, St Onge P, Anderson RL, et al: Complications associated with alloplastic implants used in orbital fracture repair. *Ophthalmology* 99:1600, 1992
38. Gruss JS, Mackinnon SE: Complex maxillary fractures: role of buttress reconstruction and immediate bone grafts. *Plast Reconstr Surg* 78:9, 1986
39. Emery JM, Noorden GK, Sclernitzauer DA: Orbital floor fractures: long-term follow-up of cases with and without surgical repair. *Trans Am Acad Ophthalmol Otolaryngol* 75:802, 1971
40. MacLennan WD: Consideration of 180 cases of typical fractures of the mandibular condylar process. *Br J Plast Surg* 5:122, 1952
41. Lindahl L, Hollender L: Condylar fractures of the mandible. II. a radiographic study of remodeling processes in the temporomandibular joint. *Int J Oral Surg* 6:153, 1977
42. Manson PN, Markowitz B, Mirvis S, et al: Toward CT-based facial fracture treatment. *Plast Reconstr Surg* 85:202, 1990
43. Burm JS, Chung CH, Oh SJ: Pure orbital blowout fracture: new concepts and importance of medial orbital blowout fracture. *Plast Reconstr Surg* 103:1839, 1999
44. Whitehouse RW, Batterbury M, Jackson A, Noble JL: Prediction of enophthalmos by computed tomography after 'blow out' orbital fracture. *Br J Ophthalmol* 78:618, 1994
45. Proffit WR, Vig KW, Turvey TA: Early fracture of the mandibular condyles: frequently an unsuspected cause of growth disturbances. *Am J Orthod* 78:1, 1980
46. Ellis E 3rd, Tan Y: Assessment of internal orbital reconstructions for pure blowout fractures: cranial bone grafts versus titanium mesh. *J Oral Maxillofac Surg* 61:442, 2003
47. Dahlström L, Kahnberg KE, Lindahl L: 15 years follow-up on condylar fractures. *Int J Oral Maxillofac Surg* 18:18, 1989
48. Ellis E 3rd, Walker LR: Treatment of mandibular angle fractures using one noncompression miniplate. *J Oral Maxillofac Surg* 54:864, 1996
49. Jordan DR, Allen LH, White J, et al: Intervention within days for some orbital floor fractures: the white-eyed blowout. *Ophthalmol Plast Reconstr Surg* 14:379, 1998
50. Zachariades N, Mezitis M, Mourouzis C, et al: Fractures of the mandibular condyle: a review of 466 cases. Literature review, reflections on treatment and proposals. *J Craniomaxillofac Surg* 34:421, 2006
51. Motamedi MH: An assessment of maxillofacial fractures: a 5-year study of 237 patients. *J Oral Maxillofac Surg* 61:61, 2003
52. Kaban LB, Mulliken JB, Murray JE: Facial fractures in children: an analysis of 122 fractures in 109 patients. *Plast Reconstr Surg* 59:15, 1977
53. Ellis E 3rd, Simon P, Throckmorton GS: Occlusal results after open or closed treatment of fractures of the mandibular condylar process. *J Oral Maxillofac Surg* 58:260, 2000
54. Koornneef L: Current concepts on the management of orbital blow-out fractures. *Ann Plast Surg* 9:185, 1982
55. Manson PN, Hoopes JE, Su CT: Structural pillars of the facial skeleton: an approach to the management of Le Fort fractures. *Plast Reconstr Surg* 66:54, 1980
56. McGraw BL, Cole RR: Pediatric maxillofacial trauma. Age-related variations in injury. *Arch Otolaryngol Head Neck Surg* 116:41, 1990
57. Luce EA, Tubb TD, Moore AM: Review of 1,000 major facial fractures and associated injuries. *Plast Reconstr Surg* 63:26, 1979
58. Eckelt U, Schneider M, Erasmus F, et al: Open versus closed treatment of fractures of the mandibular condylar process—a prospective randomized multi-centre study. *J Craniomaxillofac Surg* 34:306, 2006
59. Ellis E 3rd: Treatment methods for fractures of the mandibular angle. *Int J Oral Maxillofac Surg* 28:243, 1999
60. Gruss JS: Naso-ethmoid-orbital fractures: classification and role of primary bone grafting. *Plast Reconstr Surg* 75:303, 1985
61. Haug RH, Foss J: Maxillofacial injuries in the pediatric patient. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 90:126, 2000
62. Brasileiro BF, Passeri LA: Epidemiological analysis of maxillofacial fractures in Brazil: a 5-year prospective study. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 102:28, 2006
63. Hussain K, Wijetunge DB, Grubnic S, Jackson IT: A comprehensive analysis of craniofacial trauma. *J Trauma* 36:34, 1994
64. Ellis E 3rd, McFadden D, Simon P, Throckmorton G: Surgical complications with open treatment of mandibular condylar process fractures. *J Oral Maxillofac Surg* 58:950, 2000
65. Klopfer J, Tielsch JM, Vitale S, et al: Ocular trauma in the United States. Eye injuries resulting in hospitalization, 1984 through 1987. *Arch Ophthalmol* 110:838, 1992
66. Markowitz BL, Manson PN, Sargent L, et al: Management of the medial canthal tendon in nasoethmoid orbital fractures: the importance of the central fragment in classification and treatment. *Plast Reconstr Surg* 87:843, 1991
67. Lindahl L: Condylar fractures of the mandible. I. Classification and relation to age, occlusion, and concomitant injuries of teeth and teeth-supporting structures, and fractures of the mandibular body. *Int J Oral Surg* 6:12, 1977

68. Takenoshita Y, Ishibashi H, Oka M: Comparison of functional recovery after nonsurgical and surgical treatment of condylar fractures. *J Oral Maxillofac Surg* 48:1191, 1990
69. Gassner R, Tuli T, Hächl O, et al: Craniomaxillofacial trauma in children: a review of 3,385 cases with 6,060 injuries in 10 years. *J Oral Maxillofac Surg* 62:399, 2004
70. Iida S, Kogo M, Sugiura T, et al: Retrospective analysis of 1502 patients with facial fractures. *Int J Oral Maxillofac Surg* 30:286, 2001
71. Kawamoto HK Jr: Late posttraumatic enophthalmos: a correctable deformity? *Plast Reconstr Surg* 69:423, 1982
72. Tessier P: Total osteotomy of the middle third of the face for faciostenosis or for sequelae of Le Fort 3 fractures. *Plast Reconstr Surg* 48:533, 1971
73. Kroon FH, Mathisson M, Cordey JR, Rahn BA: The use of miniplates in mandibular fractures. An in vitro study. *J Craniomaxillofac Surg* 19:199, 1991
74. Al-Qurainy IA, Stassen LF, Dutton GN, et al: The characteristics of midfacial fractures and the association with ocular injury: a prospective study. *Br J Oral Maxillofac Surg* 29:291, 1991
75. Iizuka T, Lindqvist C, Hallikainen D, Paukku P: Infection after rigid internal fixation of mandibular fractures: a clinical and radiologic study. *J Oral Maxillofac Surg* 49:585, 1991
76. Hills MW, Deane SA: Head injury and facial injury: is there an increased risk of cervical spine injury? *J Trauma* 34:549, 1993
77. Walker RV: Traumatic mandibular condylar fracture dislocations. Effect on growth in the Macaca rhesus monkey. *Am J Surg* 100:850, 1960
78. van Hoof RF, Merckx CA, Stekelenburg EC: The different patterns of fractures of the facial skeleton in four European countries. *Int J Oral Surg* 6:3, 1977
79. Thompson DC, Nunn ME, Thompson RS, Rivara FP: Effectiveness of bicycle safety helmets in preventing serious facial injury. *JAMA* 276:1974, 1996
80. Bos RR, Rozema FR, Boering G, et al: Bio-absorbable plates and screws for internal fixation of mandibular fractures. A study in six dogs. *Int J Oral Maxillofac Surg* 18:365, 1989
81. Palmieri C, Ellis E 3rd, Throckmorton G: Mandibular motion after closed and open treatment of unilateral mandibular condylar process fractures. *J Oral Maxillofac Surg* 57:764, 1999
82. Benson BW, Mohtadi NG, Rose MS, Meeuwisse WH: Head and neck injuries among ice hockey players wearing full face shields vs half face shields. *JAMA* 282:2328, 1999
83. Zingg M, Chowdhury K, Ladrach K, et al: Treatment of 813 zygoma-lateral orbital complex fractures. New aspects. *Arch Otolaryngol Head Neck Surg* 117:611, 1991
84. Silvennoinen U, Iizuka T, Lindqvist C, Oikarinen K: Different patterns of condylar fractures: an analysis of 382 patients in a 3-year period. *J Oral Maxillofac Surg* 50:1032, 1992
85. Gruss JS, Mackinnon SE, Kassel EE, Cooper PW: The role of primary bone grafting in complex craniomaxillofacial trauma. *Plast Reconstr Surg* 75:17, 1995
86. Holt GR, Holt JE: Incidence of eye injuries in facial fractures: an analysis of 727 cases. *Otolaryngol Head Neck Surg* 91:276, 1983
87. Hogg NJ, Stewart TC, Armstrong JE, Girotti MJ: Epidemiology of maxillofacial injuries at trauma hospitals in Ontario, Canada, between 1992 and 1997. *J Trauma* 49:425, 2000
88. Alvi A, Doherty T, Lewen G: Facial fractures and concomitant injuries in trauma patients. *Laryngoscope* 113:102, 2003
89. Smith AJ, Hodgson RJ, Bridgeman K, Shepherd JP: A randomized controlled trial of a brief intervention after alcohol-related facial injury. *Addiction* 98:43, 2003
90. Hagan EH, Huelke DF: An analysis of 319 case reports of mandibular fractures. *J Oral Surg Anesth Hosp Dent Serv* 19:93, 1961
91. Appling WD, Patrinely JR, Salzer TA: Transconjunctival approach vs subciliary skin-muscle flap approach for orbital fracture repair. *Arch Otolaryngol Head Neck Surg* 119:1000, 1993
92. Hlawitschka M, Loukota R, Eckelt U: Functional and radiological results of open and closed treatment of intracapsular (diacapitular) condylar fractures of the mandible. *Int J Oral Maxillofac Surg* 34:597, 2005
93. Konstantinović VS, Dimitrijević B: Surgical versus conservative treatment of unilateral condylar process fractures: clinical and radiographic evaluation of 80 patients. *J Oral Maxillofac Surg* 50:349, 1992
94. Haug RH, Assael LA: Outcomes of open versus closed treatment of mandibular subcondylar fractures. *J Oral Maxillofac Surg* 59:370, 2001
95. Moberg LE, Nordenram A, Kjellman O: Metal release from plates used in jaw fracture treatment. A pilot study. *Int J Oral Maxillofac Surg* 18:311, 1989
96. Burnstine MA: Clinical recommendations for repair of orbital facial fractures. *Curr Opin Ophthalmol* 14:236, 2003
97. Iizuka T, Lindqvist C: Rigid internal fixation of mandibular fractures. An analysis of 270 fractures treated using the AO/ASIF method. *Int J Oral Maxillofac Surg* 21:65, 1992
98. Egbert JE, May K, Kersten RC, Kulwin DR: Pediatric orbital floor fracture: direct extraocular muscle involvement. *Ophthalmology* 107:1875, 2000
99. Ogundare BO, Bonnick A, Bayley N: Pattern of mandibular fractures in an urban major trauma center. *J Oral Maxillofac Surg* 61:713, 2003
100. Rowe NL: Fractures of the facial skeleton in children. *J Oral Surg* 26:505, 1968
101. Telfer MR, Jones GM, Shepherd JP: Trends in the aetiology of maxillofacial fractures in the United Kingdom (1977-1987). *Br J Oral Maxillofac Surg* 29:250, 1991
102. Conner WC 3rd, Rohrich RJ, Pollock RA: Traumatic aneurysms of the face and temple: a patient report and literature review, 1644 to 1998. *Ann Plast Surg* 41:321, 1998
103. Francel TJ, Birely BC, Ringelman PR, Manson PN: The fate of plates and screws after facial fracture reconstruction. *Plast Reconstr Surg* 90:568, 1992
104. Zimmermann CE, Troulis MJ, Kaban LB: Pediatric facial fractures: recent advances in prevention, diagnosis and management. *Int J Oral Maxillofac Surg* 35:2, 2006
105. Iizuka T, Lindqvist C, Hallikainen D, et al: Severe bone resorption and osteoarthritis after miniplate fixation of high condylar fractures. A clinical and radiologic study of thirteen patients. *Oral Surg Oral Med Oral Pathol* 72:400, 1991
106. Hutchison IL, Magennis P, Shepherd JP, Brown AE: The BAOMS United Kingdom survey of facial injuries part 1: aetiology and the association with alcohol consumption. *British Association of Oral and Maxillofacial Surgeons. Br J Oral Maxillofac Surg* 36:3, 1998
107. Glassman RD, Manson PN, Vanderkolk CA, et al: Rigid fixation of internal orbital fractures. *Plast Reconstr Surg* 86:1103, 1990
108. Burnstine MA: Clinical recommendations for repair of isolated orbital floor fractures: an evidence-based analysis. *Ophthalmology* 109:1207, 2002
109. Ellis E 3rd, el-Attar A, Moos KF: An analysis of 2,067 cases of zygomatic-orbital fracture. *J Oral Maxillofac Surg* 43:417, 1985
110. Manson PN, Clifford CM, Su CT, et al: Mechanisms of global support and posttraumatic enophthalmos: I. The anatomy of the ligament sling and its relation to intramuscular cone orbital fat. *Plast Reconstr Surg* 77:193, 1986
111. Gruss JS, Van Wyck L, Phillips JH, Antonyshyn O: The importance of the zygomatic arch in complex midfacial fracture repair and correction of posttraumatic orbitozygomatic deformities. *Plast Reconstr Surg* 85:878, 1990
112. Garfield E: The history and meaning of the journal impact factor. *JAMA* 295:90, 2006
113. Jafarzadeh H, Sarraf Shirazi A, Andersson L: The most-cited articles in dental, oral, and maxillofacial traumatology during 64 years. *Dent Traumatol* 31:350, 2015
114. Sandhu A: The evidence base for oral and maxillofacial surgery: 10-Year analysis of two journals. *Br J Oral Maxillofac Surg* 50:45, 2012
115. Joyce CW, Joyce KM, Sugrue CM, et al: Plastic surgery and the breast: A citation analysis of the literature. *Plast Reconstr Surg Glob Open* 2:e251, 2014
116. Joyce CW, Kelly JC, Sugrue C: A bibliometric analysis of the 100 most influential papers in burns. *Burns* 40 30, 2014

117. Marx W, Schier H, Wanitschek M: Citation analysis using online databases: Feasibilities and shortcomings. *Scientometrics* 52:59, 2001
118. McCain KW: Assessing obliteration by incorporation in a full-text database: JSTOR, economics, and the concept of "bounded rationality" *Scientometrics* 101:1445, 2014
119. Larsen PO, von Ins M: The rate of growth in scientific publication and the decline in coverage provided by Science Citation Index. *Scientometrics* 84:575, 2010
120. Mohammad AE, Laskin DM: Citation accuracy in the oral and maxillofacial surgery literature. *J Oral Maxillofac Surg* 66:3, 2008