

Turning the tables: A university league-table based on quality not quantity

Adrian G Barnett and David Moher

February 27, 2019

Supplementary List 1. **List of papers for which citations were counted.** Scores were awarded for a citation to any of these papers. PMID = pubmed ID.

CONSORT - randomised trials

- The revised CONSORT statement for reporting randomized trials: explanation and elaboration. *Annals of internal medicine* (2001), PMID=11304107
- The CONSORT statement: revised recommendations for improving the quality of reports of parallel-group randomized trials. *JAMA* (2001), PMID=11308435
- The CONSORT statement: revised recommendations for improving the quality of reports of parallel-group randomised trials. *Lancet (London, England)* (2001), PMID=11323066
- The CONSORT statement: revised recommendations for improving the quality of reports of parallel group randomized trials. *BMC medical research methodology* (2001), PMID=11336663
- The CONSORT statement: revised recommendations for improving the quality of reports of parallel-group randomized trials. *Journal of the American Podiatric Medical Association* (2001), PMID=11574648
- The CONSORT statement: revised recommendations for improving the quality of reports of parallel-group randomised trials. *Clinical oral investigations* (2003), PMID=12673431
- The CONSORT Statement: revised recommendations for improving the quality of reports of parallel-group randomized trials 2001. *Explore (New York, N.Y.)* (2005), PMID=16791967
- CONSORT 2010 statement: updated guidelines for reporting parallel group randomised trials. *BMJ (Clinical research ed.)* (2010), PMID=20332509
- CONSORT 2010 explanation and elaboration: updated guidelines for reporting parallel group randomised trials. *BMJ (Clinical research ed.)* (2010), PMID=20332511
- CONSORT 2010 Statement: updated guidelines for reporting parallel group randomised trials. *Trials* (2010), PMID=20334632
- CONSORT 2010 Statement: updated guidelines for reporting parallel group randomised trials. *BMC medicine* (2010), PMID=20334633
- CONSORT 2010 statement: updated guidelines for reporting parallel group randomized trials. *Annals of internal medicine* (2010), PMID=20335313
- CONSORT 2010 changes and testing blindness in RCTs. *Lancet (London, England)* (2010), PMID=20338625
- CONSORT 2010 Explanation and Elaboration: Updated guidelines for reporting parallel group randomised trials. *Journal of clinical epidemiology* (2010), PMID=20346624
- CONSORT 2010 Statement: Updated guidelines for reporting parallel group randomised trials. *Journal of clinical epidemiology* (2010), PMID=20346629
- CONSORT 2010 statement: updated guidelines for reporting parallel group randomised trials. *PLoS medicine* (2010), PMID=20352064
- CONSORT 2010 statement: updated guidelines for reporting parallel group randomized trials. *Obstetrics and gynecology* (2010), PMID=20410783
- CONSORT 2010 Statement: updated guidelines for reporting parallel group randomised trials (Chinese version). *Zhong xi yi jie he xue bao : Journal of Chinese integrative medicine* (2010), PMID=20619135
- CONSORT 2010 Statement: updated guidelines for reporting parallel group randomized trials. *Open medicine : a peer-reviewed, independent, open-access journal* (2010), PMID=21686296
- CONSORT 2010 explanation and elaboration: updated guidelines for reporting parallel group randomised trials. *International journal of surgery (London, England)* (2012), PMID=22036893
- CONSORT 2010 Statement: Updated guidelines for reporting parallel group randomised trials, *Italian Journal of Public Health* (2010), PMID=ijph

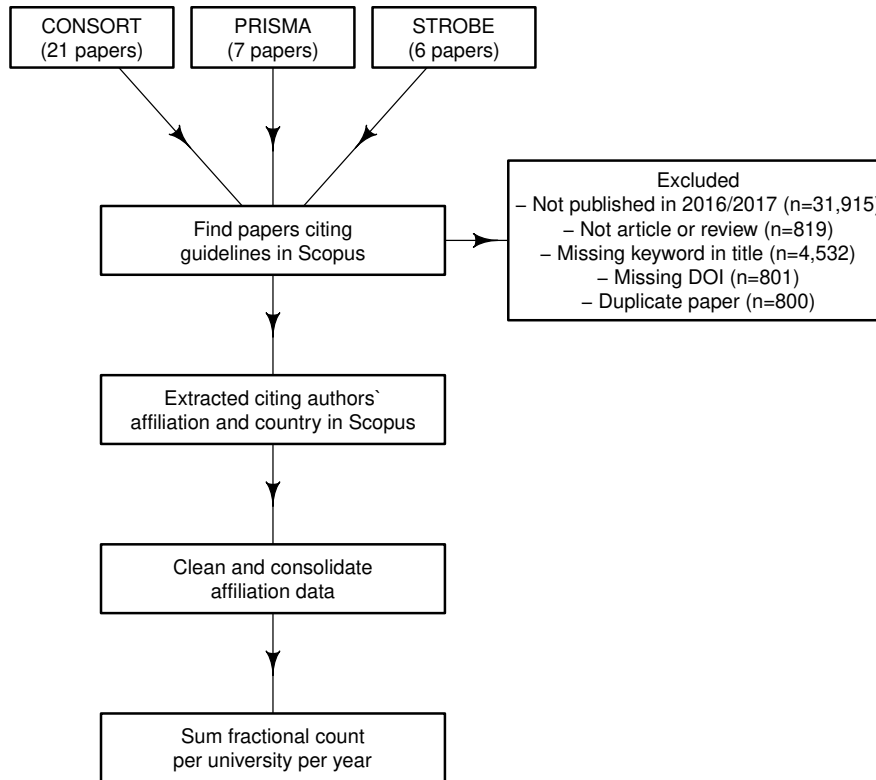
PRISMA - systematic reviews / meta-analyses

- The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: explanation and elaboration. *PLoS medicine* (2009), PMID=19621070
- The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: explanation and elaboration. *Annals of internal medicine* (2009), PMID=19622512
- The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate healthcare interventions: explanation and elaboration. *BMJ (Clinical research ed.)* (2009), PMID=19622552
- The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: explanation and elaboration. *Journal of clinical epidemiology* (2009), PMID=19631507
- Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *Journal of clinical epidemiology* (2009), PMID=19631508
- Reprint-preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *Physical therapy* (2009), PMID=19723669
- Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *International journal of surgery (London, England)* (2010), PMID=20171303

STROBE - observational studies

- Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: guidelines for reporting observational studies. *BMJ (Clinical research ed.)* (2007), PMID=17947786
- The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: guidelines for reporting observational studies. *Bulletin of the World Health Organization* (2007), PMID=18038077
- The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: guidelines for reporting observational studies. *Epidemiology (Cambridge, Mass.)* (2007), PMID=18049194
- Strengthening the Reporting of Observational Studies in Epidemiology (STROBE): explanation and elaboration. *Epidemiology (Cambridge, Mass.)* (2007), PMID=18049195
- The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: guidelines for reporting observational studies. *Journal of clinical epidemiology* (2008), PMID=18313558
- The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: guidelines for reporting observational studies. *Revista espanola de salud publica* (2008), PMID=18711640

Supplementary Figure 1. Flow chart of the data collection and management steps.



Supplementary Table 1. Summary statistics for the five clusters from the Bayesian model. Estimated probability for each cluster (π), mean scores \bar{x} , and 95% credible intervals for means.

Cluster	Probability	Mean score	95% CI
1	0.42	4.5	4.2 to 4.7
2	0.42	4.7	4.5 to 5.1
3	0.11	17.6	16.8 to 18.6
4	0.03	37.4	36.0 to 39.3
5	0.02	70.5	66.5 to 79.2
Total	1.00		

Supplementary Table 2. Top 50 ranked universities in 2016. N = numbers of papers, Score = good research practice score. The standard rank is based on counting each university's annual papers.

Rank	Affiliation	N	Score	Standard
1	University of Toronto	349	82.8	2
2	University of Sydney	234	75.8	5
3	<i>Missing</i>	121	47.3	NA
4	King's College London	184	46.5	16
5	Zhejiang University	66	42.0	176
6	University College London	152	40.7	7
7	Mayo Clinic	105	39.7	38
8	West China Hospital of Sichuan University	73	39.1	239
9	Erasmus University Rotterdam	91	38.1	92
10	University of Melbourne	149	37.6	13
11	Monash University	118	36.8	20
12	University of São Paulo	93	36.4	1
13	University of Ottawa	140	35.8	68
14	University of Oxford	121	35.7	48
15	University of Amsterdam	103	35.7	35
16	Harvard University	150	35.4	8
17	University Medical Center Utrecht	82	34.8	136
18	Københavns Universitet	87	33.6	45
19	University of Birmingham	104	33.4	89
20	University of Copenhagen	86	31.1	76
21	McMaster University	131	31.1	34
22	Imperial College London	111	29.4	62
23	VU University Amsterdam	92	27.0	24
24	University of Manchester	83	26.3	52
25	University of Queensland	90	25.6	14
26	McGill University	81	25.0	39
27	University of Alberta	92	24.9	31
28	Johns Hopkins University	94	24.4	21
29	Sun Yat-sen University	47	24.2	162
30	University of Calgary	68	24.1	94
31	Radboud University	67	23.8	69
32	Shanghai Jiao Tong University	43	22.7	96
33	Chongqing Medical University	31	22.1	633
34	Università degli Studi di Roma La Sapienza	61	22.1	130
35	University of British Columbia	62	20.3	29
36	Katholieke Universiteit Leuven	92	19.8	33
37	La Trobe University	47	19.8	128
38	University of Newcastle, Australia	55	19.7	42
39	Nanjing Medical University	35	19.6	327
40	Stanford University	73	19.2	46
41	Huazhong University of Science and Technology	27	18.9	439
42	Maastricht University	64	18.9	58
43	University of Nottingham	51	18.9	144
44	Columbia University	56	18.9	26
45	University of Bristol	63	18.2	119
46	University of New South Wales	78	17.9	134
47	University of Athens	47	17.9	73
48	University of Sheffield	48	17.6	101
49	Guangxi Medical University	26	17.5	1123
50	University of Wollongong	31	17.4	216

Supplementary Table 3. Top 50 ranked universities in 2017. N = numbers of papers, Score = good research practice score. The standard rank is based on counting each university's annual papers.

Rank	Affiliation	N	Score	Standard
1	University of Toronto	414	97.4	1
2	University of Sydney	197	67.2	5
3	West China Hospital of Sichuan University	96	56.7	206
4	<i>Missing</i>	138	56.6	NA
5	University College London	185	53.8	8
6	King's College London	188	50.3	12
7	Harvard University	221	50.1	8
8	University of Ottawa	218	47.4	95
9	Monash University	170	47.2	25
10	University of Oxford	146	46.8	64
11	University of Melbourne	167	43.7	11
12	University of Queensland	129	41.5	16
13	University of Amsterdam	123	40.0	34
14	University of São Paulo	83	39.5	2
15	Mayo Clinic	107	37.8	31
16	University of British Columbia	104	36.3	34
17	Zhejiang University	64	36.1	256
18	McMaster University	174	35.7	42
19	University of New South Wales	118	34.4	92
20	Johns Hopkins University	115	34.0	22
21	VU University Amsterdam	109	32.1	23
22	Sun Yat-sen University	64	31.6	148
23	University of Groningen	92	30.4	20
24	Imperial College London	116	30.1	60
25	University of Copenhagen	102	29.9	68
26	University of Birmingham	79	29.2	99
27	Erasmus University Rotterdam	88	29.0	111
28	University of North Carolina, Chapel Hill	78	28.5	4
29	University of Manchester	96	28.3	72
30	Københavns Universitet	68	27.6	41
31	University Medical Center Utrecht	67	27.1	143
32	University of Calgary	72	26.8	111
33	University of Alberta	74	25.6	39
34	Maastricht University	81	25.3	52
35	Huazhong University of Science and Technology	38	25.2	452
36	London School of Hygiene & Tropical Medicine	86	25.0	411
37	McGill University	93	24.6	40
38	Radboud University	76	23.5	58
39	Western University	69	23.2	104
40	University of Newcastle, Australia	81	23.0	44
41	University of Adelaide	65	21.9	124
42	Guangxi Medical University	40	21.5	1806
43	University of Sheffield	61	21.5	89
44	Federal University of Rio Grande do Sul - UFRGS	54	21.3	77
45	Wuhan University	36	20.9	390
46	Università degli Studi di Roma La Sapienza	63	20.7	139
47	University of Bristol	72	20.7	116
48	Katholieke Universiteit Leuven	79	20.6	30
49	Nanjing Medical University	43	20.5	374
50	Peking University	48	20.3	92

Supplementary Figure 2. Scatter plot of the width of the 95% bootstrap interval against rank using the top 200 universities in both years. The linear regression line in red has an average increase of 13.6 in interval width per 10 increase in rank.

