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LETTERS TO THE EDITOR

Reputation rankings for pediatric urology moderately reflect academic productivity



Lloyd et al. [1] presented the Publication Ranking Score (PRS) as an objective measure of hospital “process” quality that differs significantly from US News and World Report (USNWR) hospital rankings. This contrast is important, the authors suggested, because USNWR rankings may “lean heavily on institutional reputation.” The USNWR reputation survey, however, accounts for only 25% of the overall ranking. In this context, Joseph [2] suggested that “the PRS ranking would be better compared to the process domain (reputation) and not the overall final institutional ranking”. Such an analysis is presented below, revealing that the PRS is significantly associated with reputation in the specialty of pediatric urology.

I extracted the published PRS data (impact factor-normalized number of publications) for the top 50 pediatric urology hospitals from 2012 [1] and identified individual institutions based on their USNWR rank and number of faculty. The scores were linked with mean USNWR reputation scores in pediatric urology from 2011 to 2013 (all the years when USNWR published data for the top 50 children’s hospitals in each specialty) [3–5]. For years when a hospital was not in the top 50, its reputation score was set to zero. Descriptive statistics and Spearman’s correlation coefficients were calculated using Microsoft Excel 2010/XLSTAT-Pro 2013.4.04 (Addinsoft, New York, NY). Percentage agreement was determined by the number of top *n* hospitals ranked by PRS that were also in the top *n* ranked on the basis of USNWR reputation score.

Institutional rank based on PRS differed from that based on USNWR reputation score by a mean ±7.8 positions (Table 1), which is somewhat less than the average ±12.0 position change between overall USNWR ranking and PRS ranking that Lloyd et al. [1] reported. The majority of rankings based on reputation score agreed with PRS rankings. Compared to PRS, rankings based on reputation similarly classified the top hospital, six of the top 10 hospitals, and 16 of the top 20 hospitals. Across all 50 hospitals, there was a highly statistically significant association of moderate size between PRS and reputation score ($\rho = 0.576, p < 0.0001$).

Other than the focus on reputation, several differences between the current analysis and that of Lloyd et al. merit mention.

Table 1 Publication Ranking Score (PRS) (2006–2011) of the US News and World Report (USNWR) 2012 top 50 pediatric urology hospitals re-ranked by USNWR reputation score (2011–2013).

PRS (no. of publications adjusted by impact factor)	PRS rank	REP (USNWR specialist reputation score average 2011–2013; in %)	REP rank	Change in ranking (PRS–REP)
505.3	1	85.8	1	0
308.3	2	23.4	9	–7
265.6	3	11.1	10	–7
237.6	4	6.5	13	–9
210.8	5	26.0	6	–1
207.8	6	79.3	2	4
196.7	7	8.8	12	–5
176.3	8	6.3	14	–6
176	9	0.6	37	–28
171.6	10	39.4	4	6
159.4	11	33.1	5	6
151.9	12	4.7	19	–7
147.1	13	24.8	8	5
143.3	14	4.8	18	–4
141.6	15	4.4	20	–5
138.7	16	1.4	27	–11
137.9	17	10.5	11	6
116.5	18	0.3	43	–25
113.8	19	2.9	24	–5
108.5	20	59.6	3	17
106.7	21	0.3	44	–23
90.5	22	1.6	25	–3
90.1	23	3.5	22	1
86.8	24	0.7	35	–11
84.9	25	5.0	17	8
74.8	26	1.2	29	–3
72.3	27	0.5	39	–12
65.6	28	3.4	23	5
60.1	29	0.9	32	–3
57.8	30	0.0	47	–17
57.5	31	1.0	30	1
53	32	24.9	7	25
52.9	33	0.1	46	–13
50.3	34	1.2	28	6
44.5	35	1.4	26	9
41.3	36	5.2	16	20

(continued on next page)

Table 1 (continued)

PRS (no. of publications adjusted by impact factor)	PRS rank	REP (USNWR specialist reputation score average 2011–2013; in %)	REP rank	Change in ranking (PRS–REP)
33.7	37	0.0	47	–10
33.6	38	0.4	42	–4
33.3	39	0.0	47	–8
32.2	40	5.8	15	25
28.7	41	0.4	40	1
21.4	42	1.0	30	12
19.6	43	0.9	33	10
18.3	44	0.0	47	–3
13.2	45	0.2	45	0
12.3	46	4.4	20	26
10.4	47	0.7	35	12
8.5	48	0.6	38	10
2.3	49	0.4	40	9
1.7	50	0.8	34	16

First, while multiple years of data were included in the PRS, the authors compared only 1 year of USNWR rankings. Noise from year-to-year changes in ranking methodology or data error may obscure real relationships. To address this concern, I averaged 3 years of reputation data.

Second, the authors did not describe how they determined PRS rankings. They reported ties at ranks 47 and 49 despite differences in impact factor-adjusted publication numbers, which may affect the rank-based statistics calculated. For transparency, I recalculated PRS rankings based on those raw scores alone.

Third, the authors computed Spearman's rank correlations on the USNWR top 10 subgroup (in addition to the entire top 50), even though a sample size of 10 is underpowered to detect associations of moderate size using this test [6]. Unsurprisingly, they failed to find a statistically significant correlation between USNWR rank and PRS ranks in this group.

Finally, though the authors found a highly statistically significant association between the overall ranks of institutions in the USNWR top 50 and PRS ranks ($p = 0.0004$), they write it off as "little correlation". To the contrary, a Spearman's ρ of 0.48 is considered of moderate size. The current analysis only further reaffirms the presence of an association between PRS and existing quality metrics.

These findings suggest that reputation captures an aspect of hospital quality that overlaps significantly with academic productivity. The existence of collinearity may hold implications for ranking publishers and policy-makers looking for adjunctive measures of hospital process quality.

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Conflict of interest

None.

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Response to "Reputation rankings for pediatric urology moderately"



We read with interest the recent letter regarding the Publication Ranking Score (PRS), and we appreciate the author's methodological points.

As we noted in the paper, the point of the PRS paper was to neither advocate for nor against any particular ranking system—including our own. Rather, we hoped to draw attention to the fact that USNWR ranks hospitals based solely on clinical parameters and does not formally consider academic productivity. Given the academic structure of most pediatric urology programs, it is not surprising that there was a moderate degree of correlation between "reputation" and academic productivity. What is interesting, to us at least, is that this correlation was not stronger.

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