The Dynamic Nature of GI Twitter

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Background

Social media has become increasingly popular in the healthcare field. Many healthcare professionals have turned to Twitter to engage in interdisciplinary discussions and to follow new developments within their specialty. Previously we looked at the characteristics of the most influential twitter users within the field of gastroenterology. In the present study, we evaluate the dynamic changes of top GI twitter influencers over one year.

Methods

The top 100 GI Twitter influencers were collected between 2020 and 2021. After removing institutions, 55 influencers remained. To compare them, cluster analysis methodology was used. Influencers were grouped based on whether they had an advanced academic degree, the number of physicians per capita in the city where influencers lived, and the number of years of training they had received. Based on the empirical solution for the groups identified, comparisons were made by year (chi-square test of independence) and comparing average H index scores and average Twitter rankings (mixed-effects modeling).

Results

Three groups were identified, however, only two were meaningful since the third group had very low representation (Table 1a). The meaningful groups seemed to represent a research focus (group 1, more advanced degrees and training), and a clinical focus (group 2, less advanced degrees and training). This was further supported by the H index scores which increased for the research focused group ($X2$ (1) = 4.55, p = 0.032), but did not change for the clinical focused group ($X2$= 6.27, p = 0.043; Table 1b). The clinical focused group had numerically higher rankings on average ($X2$ (2) = 5.47, p = 0.065), but decreased in rankings between 2020 and 2021 ($X2$= 11.02, p = 0.0040; see Table 1b and Figure 1). The research focused group had minimal change in rankings over time ($X2$ = 0.11, p = 0.73).

Table 1a. Group Summary Table

	Research focused Mean (95% C.I.)	Clinical focused Mean (95% C.I.)
Grouping variables		
Frequencies	27	22
Advanced Degree	52% [33%-70%]	32% [16%-54%]
Physicians per Capita	296 [288-304]	326 [301-351]
Years Training	6.19 [5.3-7.22]	5.91 [4.96-7.05]
Outcomes		
H Index	42.7 [32.8-52.7]	21.8 [10.3-33.3]
Rankings	28.2 [23.5-33.0]	33.3 [28.2-38.5.0]

Table 1b. Hypothesis Tests

	X^2	P-value
Empirical grouping between years	0.55	0.759
Comparing H Index Scores		
Empirical groupings	3.65	0.16
Year	4.55	0.032
Empirical groupings by year	6.27	0.043
Comparing Rankings		
Empirical groupings	5.47	0.065
Year	0.11	0.735
Empirical groupings by year	11.01	0.004

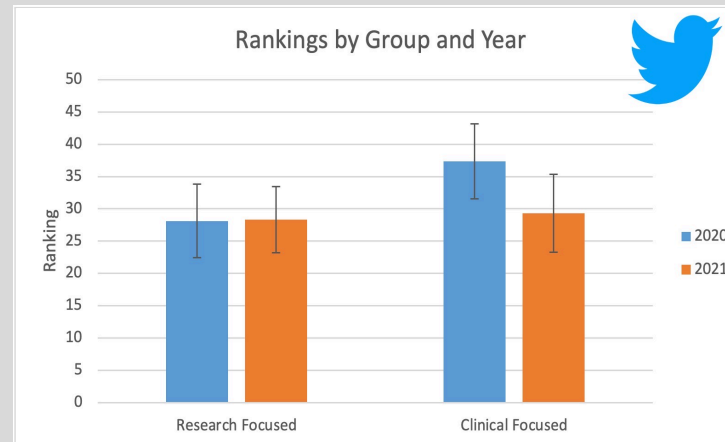Table 1. a) Group Summary Table, b) Hypothesis Tests

Fig 1. GI-Twitter rankings by group and year

Conclusion

Our preliminary study identified two main groups of GI-twitter influencers: research and clinical focused. Our results imply that research-focused GI-twitter influencers may represent a core of physician-scientists that contribute to the literature but also remain high on the GI twitter rankings. However, and despite showing regression to the mean, clinical-focused influencers seem to be more popular and have higher GI-twitter rankings. Potential explanations may include more public accessibility during this pandemic period. Limitations of this preliminary study include the short follow-up period and the relatively small number of influencers.