

The effect of industry authors on the impact and perception of publications

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Poster #25

Introduction

- Previous research suggests that the scientific impact of a publication increases with the number of authors.¹ However, research into the effect of the proportion of industry to non-industry authors in clinical publications is lacking

Objective

- To investigate the academic and social impact of industry authorship of peer-reviewed clinical publications, and their perceived credibility amongst healthcare professionals (HCPs)

Methods

- A PubMed search was performed, focusing on clinical trials and meta-analyses in oncology, cardiometabolism, central nervous system, and inflammation from 2018–2023
- For papers that included industry authors, academic and social impact was measured by total citations and X (Twitter) interactions, respectively
- Pearson's correlation analysis between industry authors as a percentage of total number of authors and publication impact was performed, with one-way ANOVA with Sidak's multiple comparisons test used to analyse the effect of <50% industry authors versus >50%. The impact of industry first or last authors was analysed using the Mann-Whitney test
- In addition, an online survey of European and US HCPs specialising in cardiovascular, inflammation, oncology, or primary care, recruited from a market research database, was conducted to understand attitudes towards the presence of industry authors included on clinical publications

Results: Literature search

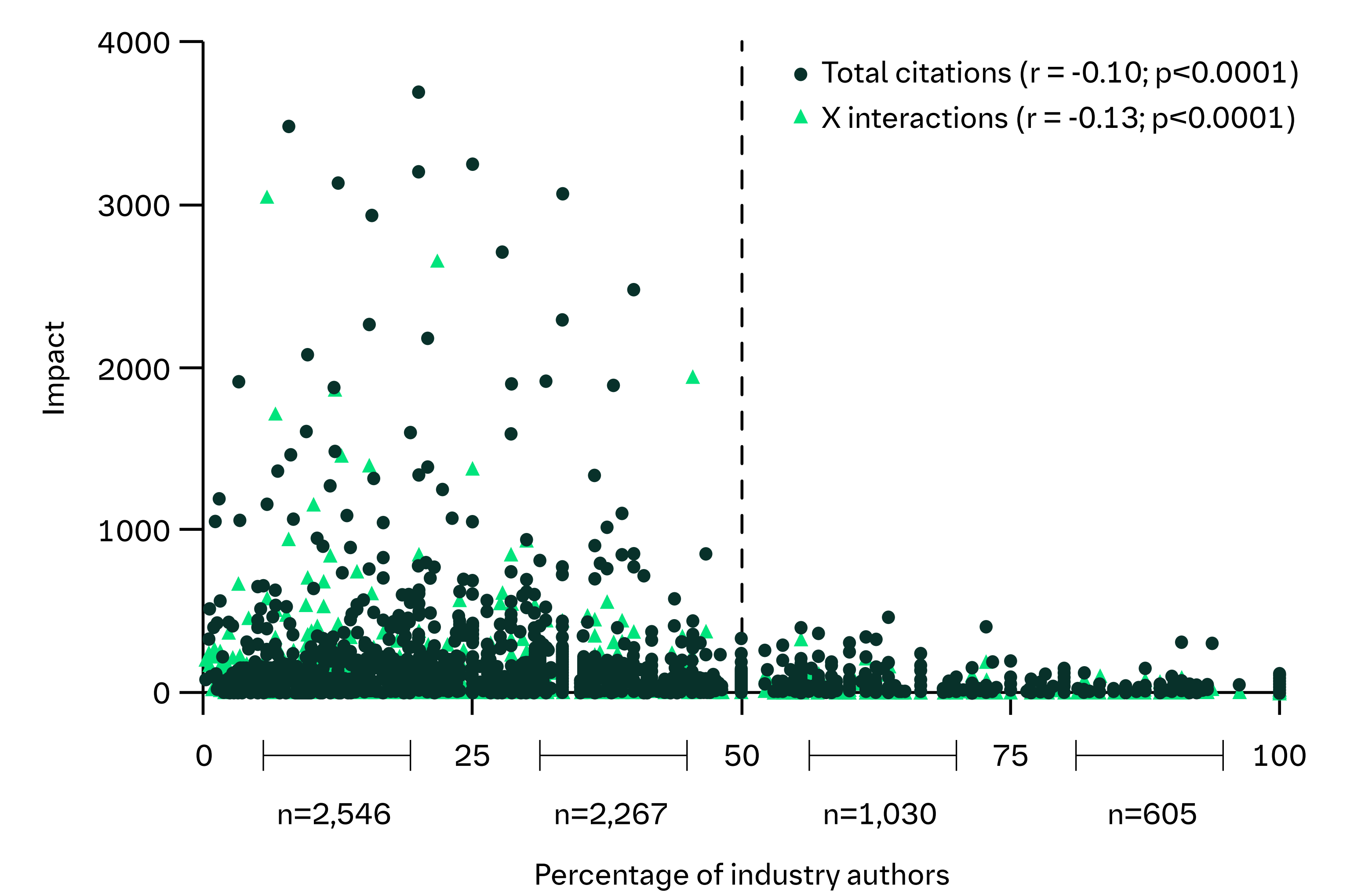
Publications included

- Of 173,946 total papers identified, 6,448 included industry authors
- The majority of papers were in oncology (n=3,476), cardiometabolic disease (n=1,711), and inflammation (n=722)
- Most papers scanned were prospective clinical trials (n=4,451) or observational studies (n=884), with 334 meta-analyses also included
- On average, papers had ≤15 total authors and ≤4 industry authors

The impact of industry authors

- There was a weak but significant negative correlation between percentage of industry authors and academic citations and X interactions (r = -0.10 and r = -0.13, respectively; both p<0.0001) (**Figure 1**)
- Publications with >50% industry authors were associated with lower citation counts and X activity, irrespective of disease area and journal impact factor

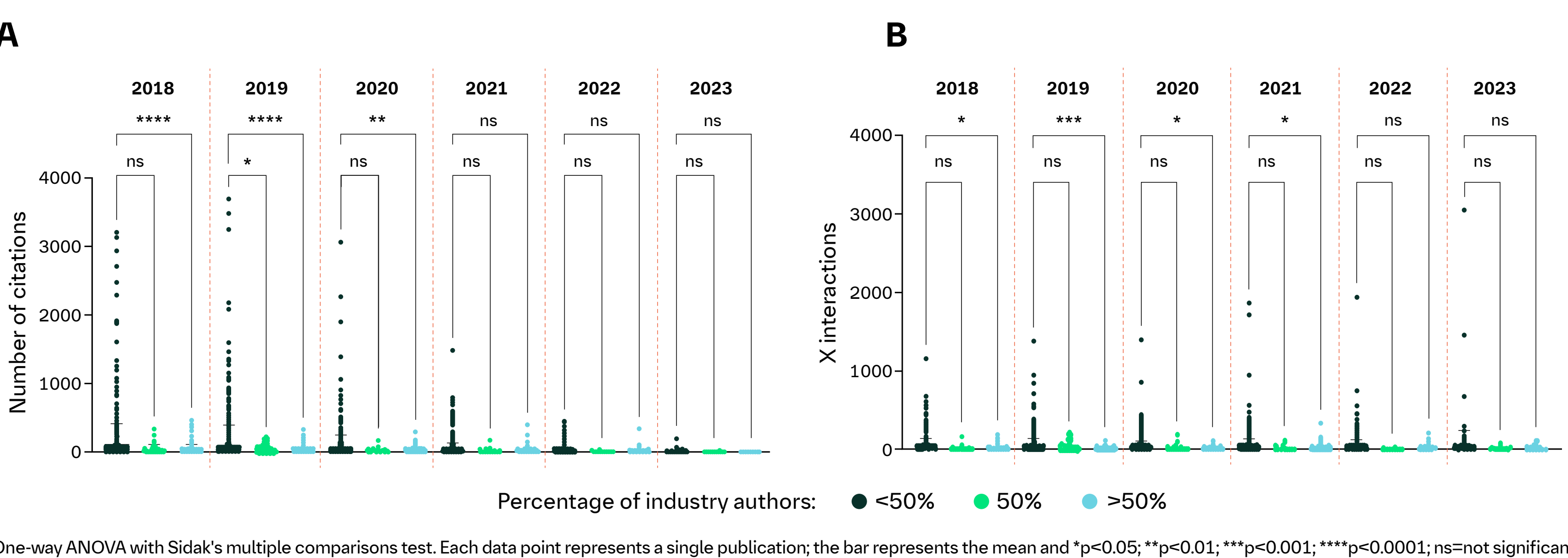
Figure 1: Correlation between percentage of industry authors and citations and X interactions



Pearson's correlation analysis between industry author percentage and publication impact as total citations and X interactions.

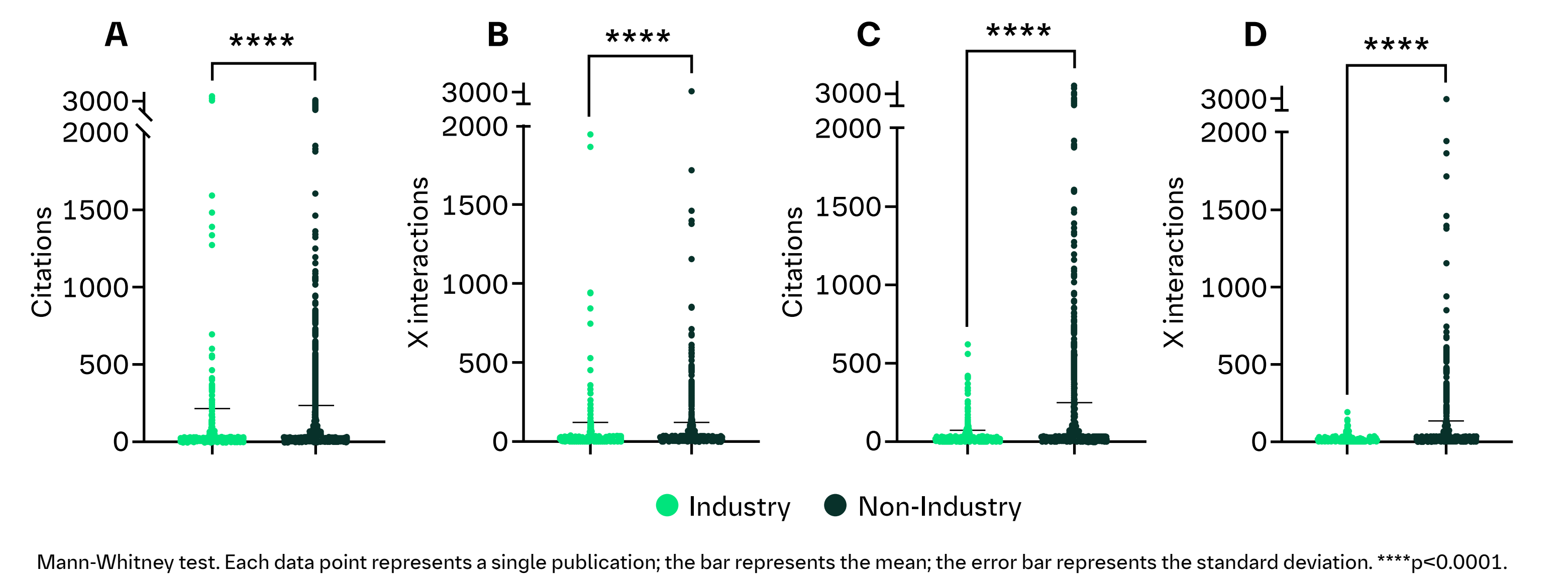
- Citation impact and social media outreach was significantly higher for papers with <50% industry authors (**Figure 2**). Additionally, papers with industry authors as the first or last author had significantly lower citation counts and X interactions than those with a non-industry author (p<0.0001) (**Figure 3**)

Figure 2: Correlation between percentage of industry authors and A) citations and B) X interactions



One-way ANOVA with Sidak's multiple comparisons test. Each data point represents a single publication; the bar represents the mean and *p<0.05; **p<0.01; ***p<0.001; ****p<0.0001; ns=not significant.

Figure 3: Correlation between industry first authors and A) citations and B) X interactions, and the correlation between industry last authors and C) citations and D) X interactions



Results: HCP survey

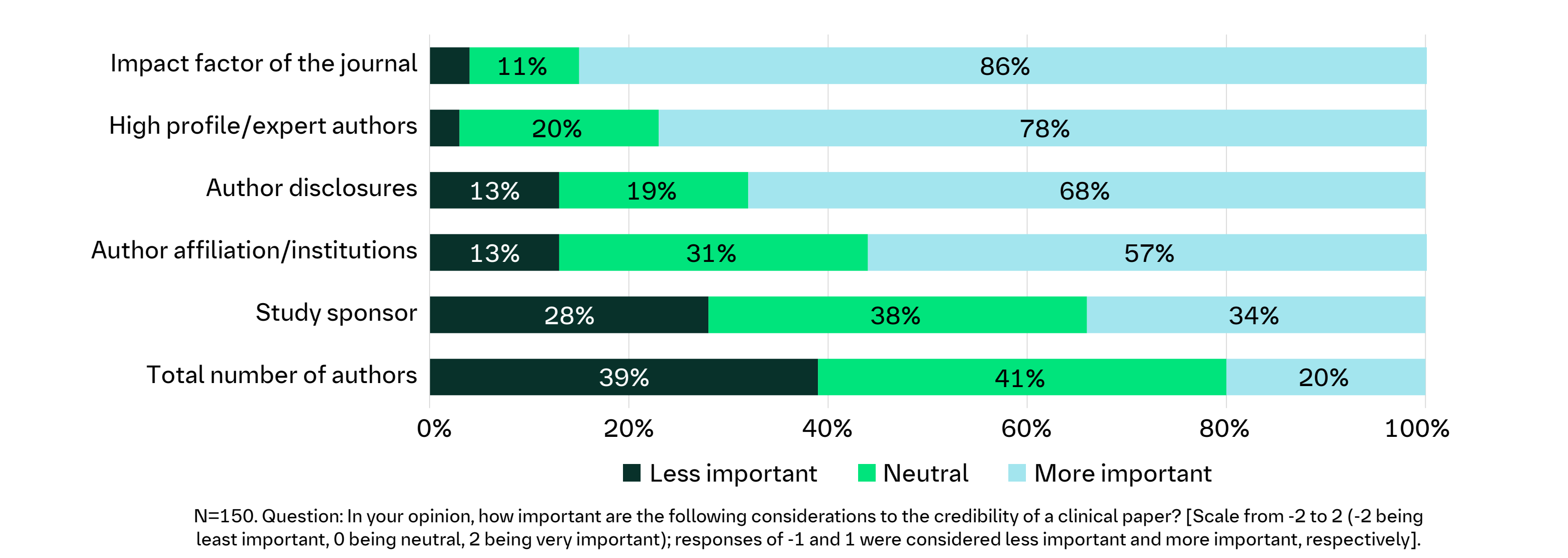
Participants

- Participants (N=150; 27% cardiovascular, 27% oncology, 26% inflammation, 21% primary care) had practised in their specialty for a mean of 16 (range 1–46) years
- 7% were affiliated with a pharmaceutical company and 12% had previously been authors on an industry-sponsored clinical paper

Perceived credibility of industry authors

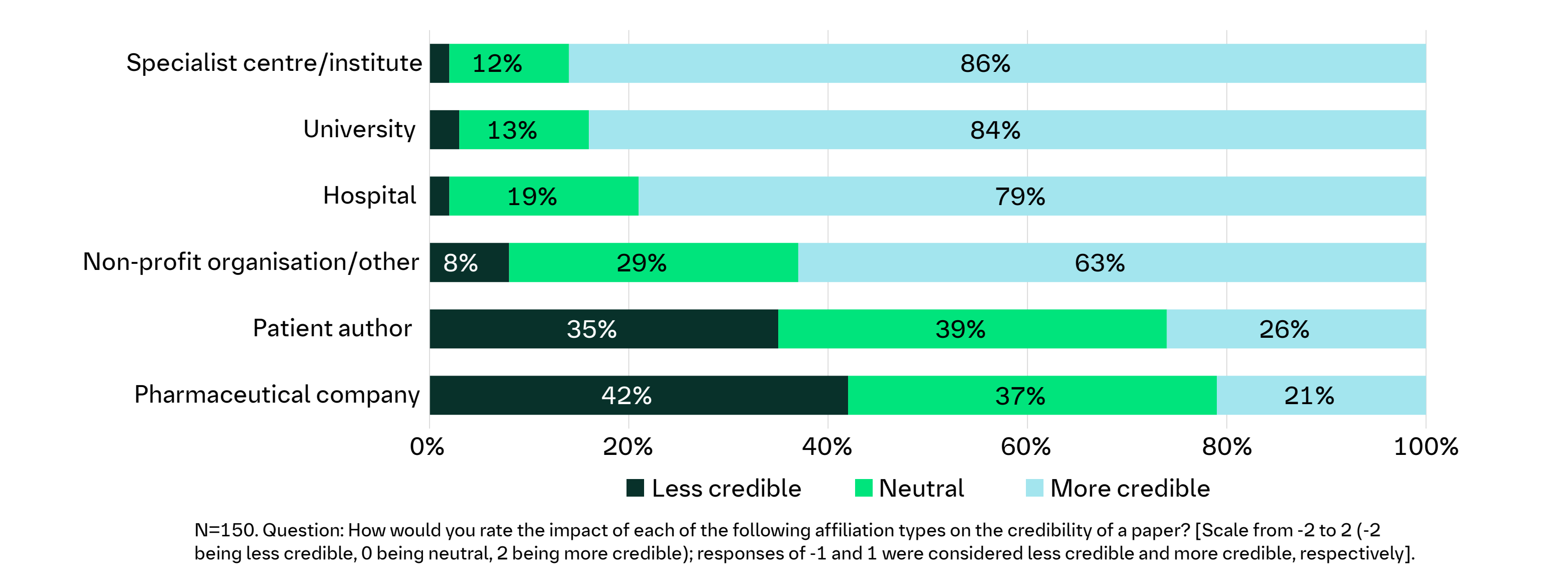
- Journal impact factor (86%) and author profile (78%) were considered the most important factors affecting credibility (**Figure 4**)
- 57% and 20%, respectively, thought affiliations and total author number were most important

Figure 4: HCP ratings for the considerations affecting the credibility of a clinical paper



- 42% of HCPs considered that the inclusion of industry authors lowered the credibility of a publication, and 21% thought this increased the credibility (**Figure 5**)

Figure 5: HCP ratings for the impact of affiliation types on the credibility of a clinical paper



- A high number or majority of industry authors reduced perceived credibility of a publication (57% and 62%, respectively); 68% associated this with a potential for bias
- 15% of respondents thought it appropriate for an industry author to be lead author, with 50% considering it not appropriate; 59% thought that having an industry author as lead or last author lowered the credibility of the publication, with 16% viewing this as increasing credibility

Limitations

- The analysis only included selected therapy areas, and was predominantly based on clinical trials in oncology. Variability in individual study designs or data was not accounted for
- The HCP survey included only a limited number of specialties and countries, and therefore may not be representative of the views of HCPs in other specialties and regions
- The majority of papers in the analysis were published before the GPP 2022 update,² in which the recommendation for ≤10 authors was removed and the clarification that salaried employees are not disqualified from authorship was added. Therefore, the effect of this update on our results is unclear

Discussion

- A higher proportion of industry authors on a clinical paper reduced its impact and reach
- Papers with >50% industry authors or with industry authors as first or last authors had lower citation counts and X activity than those with <50%
- In parallel, a survey of HCPs across Europe and the US showed that the inclusion of industry authors reduced the perceived credibility of publications by HCPs
- The full impact of the updated authorship determination criteria in GPP 2022² is not yet known; this may help ensure more equitable representation and transparency in scientific publications