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ORIGINAL SCIENTIFIC REPORT (INCLUDING PAPERS PRESENTED AT SURGICAL CONFERENCES)

Honorary Authorships in Surgical Literature

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Abstract

Introduction Honorary authorship (HA) is defined as an enlisted co-author who did not make sufficient contributions to merit being included as a co-author according to the ICMJE guidelines on authorship. It is unknown if HA is present in the surgical literature.

Methods We analysed studies published in 2016 in five journals with the highest impact factor in general surgery. All original articles, reviews and clinical trials with more than one author were included. Corresponding authors of these manuscripts received an online survey by email. The survey consisted of three parts focussing on demographics, knowledge and application of the ICMJE guidelines, and deciding authorship.

Results In total, 320 of the 1037 surveys were completed (30.9%). Two hundred and seventy-two (88.6%) of the corresponding authors were aware of the ICMJE authorship guidelines, and 203 (66.3%) were aware of the general issue of honorary authorship. One hundred and thirty-five (44.0%) responders reported at least one co-author who only performed tasks which should not merit actual authorship according to the ICMJE guidelines. Furthermore, only 46 (15.0%) of the responders believed that a co-author listed for their article did not make sufficient contribution to merit being included as co-author. No significant differences were found between the journals investigated.

Conclusion Despite ICMJE guidelines to reduce HA, the prevalence may still exist to a higher level than preferable. The authors plead for more transparent authorship systems in which journal editors and senior department members take more responsibility into enforcement of the ICMJE guidelines.

Introduction

Authorships in the medical literature reflect acknowledgement to the work creativity and generation of knowledge of authors. Based on "hard numbers" such as amount of publications, citations and height of the H-index (an author-level metrics that measure the productivity and citation impact of a specific author's publications, based on the researcher's most cited papers and numbers of citations in other publications), researchers may be rewarded by research grants, better positions at the institutions or gain more prestige among peers.

In order to guide researchers on who should be included as an author, the International Committee of Medical

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Journal Editors (ICMJE) published a guideline with criteria authors should meet [1, 2]:

1. "Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work";
2. "Drafting the work or revising it critically for important intellectual content";
3. "Final approval of the version to be published";
4. "Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved".

The ICMJE recommends that authorship should be based on fulfilling all of these four criteria. Many journals adhere to this guideline. Authors not fulfilling these criteria but still enlisted as author on the publication are considered honorary authors. Three forms of honorary authorship (HA) are described in the literature; *gift authorship* is out of respect for or gratitude to an individual [2]. *Guest authorship* is most commonly used to increase the apparent quality of a paper by adding a well-known name or to conceal a paper's industry ties by including an academic author. And lastly, *coercive authorship* consists of a senior researcher imposing a junior researcher to include a gift or guest author [2]. In all of the three forms of HA described, ethical concerns may arise. With authorship being a key parameter for academic advancement, HA inflates the bibliography of the honorary author causing possible unfair advantages for those aspiring to an academic career [3]. Previous studies have shown that the prevalence of HA in other fields such as radiology, dermatology and neurosurgery ranges between 14 and 62% [4–6]. However, since no recent literature has focused on the prevalence of HA in surgical literature, this study was set up to investigate this issue.

Methods

The authors searched PubMed for all articles published in 2016 in five major surgical journals. These journals were chosen because of their highest impact factor in general surgery in 2017 and are therefore expected to give good estimate of the prevalence of HA. The following journals were included: Annals of Surgery (AoS; impact factor 9.203), British Journal of Surgery (BJS; impact factor 5.433), JAMA Surgery (JAMA; impact factor 8.498), Journal of the American College of Surgeons (JACS; impact factor 4.767) and Surgery (SU; impact factor 3.574). All original articles, reviews and clinical trials with at least two authors and available email address of the corresponding author were included. All letters to the editors and correspondences were excluded. In the case of multiple publications in the same journal or different journals in the same year by a corresponding author, only one survey would be sent out to that author.

The survey was based on similar surveys used in other medical disciplines [4, 7, 8]. The current survey was modified to be more suitable for the surgical literature. The survey consisted of three consecutive groups of 19 questions in total; the first group of 6 questions dealing with demographics; a second group of 5 questions considering the awareness of the ICMJE guidelines and the practice of authorship guidelines; and finally the last group of 8 questions covering the authorship decision making of their own actual surveyed manuscript. Upon completion of the survey, an inquiry was made pertaining to the perceived honorary authors in the respondent's own article.

The questionnaire is included in the supplementary material.

Online distribution of the survey took place via SurveyMonkey (Palo Alto, CA). The first emails were sent in August 2017, and in the four following weeks, the surveys to the remaining four journals were sent. An email reminder was sent to all non-responders and partial responders after 4 and 8 weeks, respectively. The last reminder was sent in October 2017.

Statistical analysis

Statistical analyses were performed using SPSS, version 24.0 (SPSS, Inc., Chicago, USA). The mean differences with standard deviation (SD) were calculated for continuous variables. Associations between respondent's characteristics and the variations between subgroups were expressed in Chi-square analyses to compare proportional differences. P values less than 0.05 were considered statistically significant.

Results

Survey responders

A total of 1.909 publications published in 2016 were screened (AoS 654, BJS 277, JAMA 381, JACS 299, SU 298), of which 1.060 met the inclusion criteria. As 23 addresses were not functional, a total of 1.037 surveys were sent by email. A total of 320 corresponding authors responded to the survey, leading to a response rate of only 30.9%. A total of 307 corresponding authors (95.5%) fully completed the survey. Figure 1 demonstrates an overview of the study procedure.

South America (0 respondents) and Africa (1 respondent (0.3%) were under-represented. Most respondents (148 out

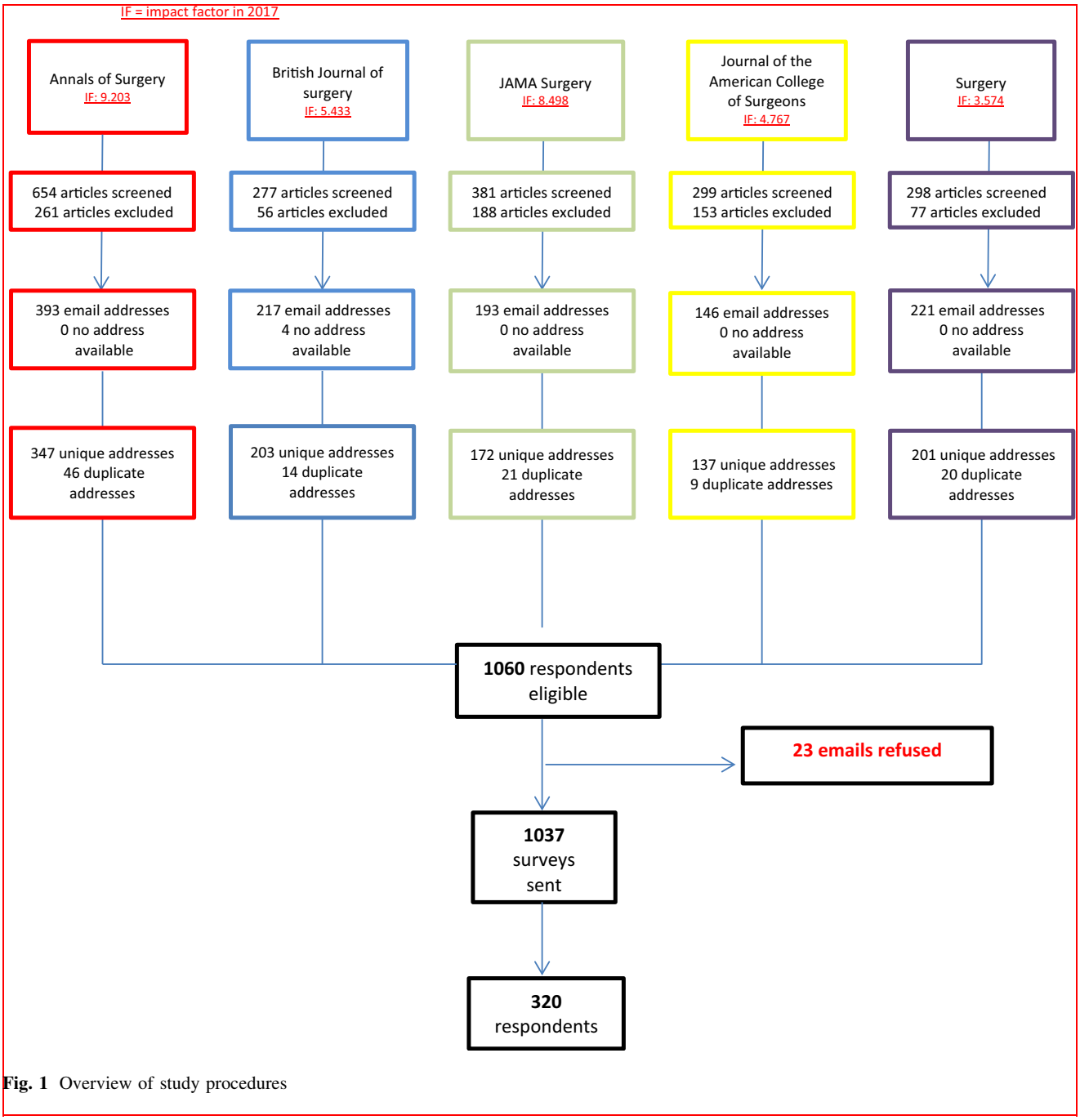

Fig. 1 Overview of study procedures

of 320; 46.3%) originated from Europe and 124 (38.7%) from North America (USA and Canada) especially from the USA, Great Britain, the Netherlands, Italy and France (Fig. 2).

The majority of the responders (236; 77.4%) were male and more specifically male registered surgeons (224; 73.0%) (Table 1). 119 (39.9%) respondents were professors in surgery, and 35 (11.7%) were employed as fellows or surgical residents.

Awareness and frequency of honorary authorship

A total of 272 (88.6%) of the responders reported to be aware of the ICMJE authorship guidelines, and 203 (66.3%) were aware of the general issue of HA (Table 2). The majority (45 out of 74, 60.8%) of the responders who were not aware of the ICMJE guidelines followed local department or institution guidelines. On the other hand, twenty (27.0%) responders who were unaware of the

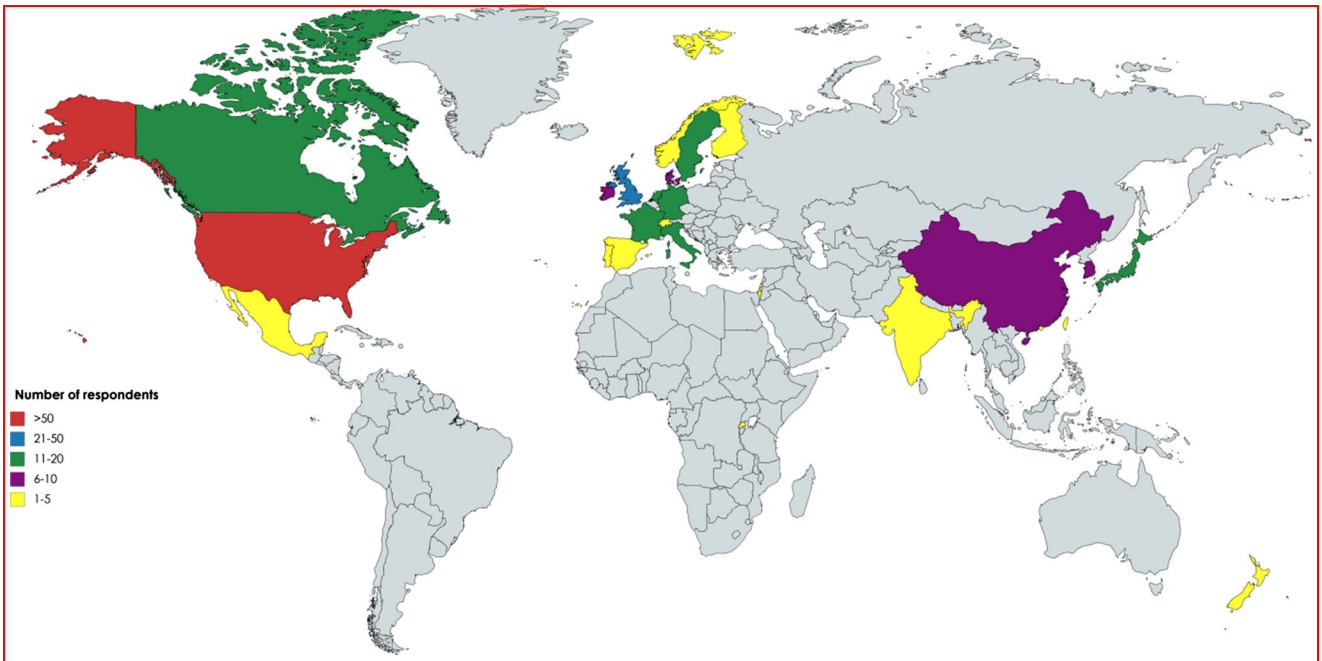

Fig. 2 Map depicting the countries of the respondents. https://mapchart.net/world.html

Table 1 Characteristics of respondents

Characteristic	*N* (%)	Characteristic	*N* (%)
Sex	305*	Academic title	298*
Male	236 (77.4)	Professor	119 (39.9)
Female	69 (22.6)	Associate professor	60 (20.1)
		Assistant professor	38 (12.8)
Continent	320*	Instructor/lecturer	16 (5.4)
Africa	1 (0.3)	Fellow/resident	35 (11.7)
Asia and Oceania	47 (14.7)	Other	30 (10.1)
Europe	148 (46.3)		
North America	124 (38.7)	Length of professional experience	307*
South America	0	1–2 years	30 (9.8)
		3–5 years	48 (15.6)
Primary profession	307*	6–10 years	66 (21.5)
Surgeon	224 (73.0)	> 10 years	163 (53.1)
Other MD	36 (11.7)		
PhD/researcher	34 (11.1)	Peer-reviewed manuscripts co-authored	320*
Other	13 (4.2)	< 5	19 (5.9)
		6–10	25 (7.8)
		11–15	23 (7.2)
		16–20	10 (3.1)
		21–25	13 (4.1)
		> 26	230 (71.9)

*Numbers differ with regard to questions answered

Table 2 Determining authorships and awareness of authorship guidelines

Characteristic	*N* (%)	Characteristic	*N* (%)
Primary role in actual writing of the article	307*	Aware of ICMJE guidelines	307*
Wrote all or most of the articles	184 (59.9)	Yes	272 (88.6)
Wrote minor parts of the article	3 (1.0)	No	35 (11.4)
Only revised and made corrections	21 (6.8)		
Supervised writing of others	45 (14.7)	If not, aware of other guidelines	74*
Performed majority of data collection/analysis	11 (3.6)	Department/institution guidelines	45 (60.8)
Other	43 (14.0)	No guidelines are followed	20 (27.0)
		Other	9 (12.2)
Position on 2016 paper in AoS/BJS/JAMA/JACS/SU	307*		
First author and corresponding author	142 (46.3)	Aware of the general issue of honorary authorships	306*
First author but not corresponding author	4 (1.3)		
Corresponding author but not first author	33 (10.7)	Yes	203 (66.3)
Senior author and corresponding author	121 (39.4)	No	103 (33.7)
Senior author but not corresponding author	7 (2.3)	Senior member of the department, who is automatically listed as an author on all submitted manuscripts	307*
Decided the order of authorship	307*		
First author	80 (26.1)		
Senior author	97 (31.6)	Yes	56 (18.2)
Authors decided as a group	122 (39.7)	No	232 (75.6)
Other	8 (2.6)	Don't know	19 (6.2)
		If so, do you feel this is justified?	190*
Criteria used to determine authorship: authors listed	306*	Never justified	58 (30.5)
In the order of the amount each contributed	86 (28.1)	Rarely justified	57 (30.0)
In the order of the amount each contributed, except the last author, who is the most senior in the group but did not contribute to the study	11 (3.6)	Sometimes justified	49 (25.8)
		Most of the time justified	16 (8.4)
		Always justified	10 (5.3)
In the order of the amount each contributed, except the last author, who provided the concept, supervision and responsibility for all working steps of the project	189 (61.8)	Did anyone suggest to include a honorary author	307*
		Yes	27 (8.8)
In alphabetical order	1 (0.3)	No	280 (91.2)
Other	19 (6.2)		

*Numbers differ with regard to questions answered

guidelines stated that no guidelines were followed while writing their articles.

The vast majority of the responders were the corresponding author as well as either the first author (142; 46.3%) or the senior author (121; 39.4%). The order of authorship was decided by all authors as a group (122; 39.7%), by the senior author (97; 31.6%) or by the first author (80; 26.1%) (Table 2). In 275 research groups (89.9%), the sequence of authors was based on the amount each author contributed to the article. The last author in the row was reserved for the supervising author who provided the concept and took the responsibility for all working steps of the concept in the majority of these research groups (189; 61.8%). In 27 (8.8%) of the cases, one of the co-authors suggested to include an honorary author (Table 2).

According to 135 (44.0%) of the responders, at least one of the co-authors presented in their paper performed tasks deemed insufficient to be named an actual author according to the ICMJE guidelines, i.e. *ICMJE-defined HA*. However, only 46 (15.0%) of the responders believed that a co-author listed for their article according to their own opinion did not make sufficient contribution to merit being included as co-author, i.e. *perceived HA*. Figure 3 shows an overview of the percentages ICMJE-defined and perceived HA per journal.

A senior member of the department was automatically listed as an author on a submitted manuscript in 56 (18.2%) articles. The minority of the responders (10 out of 190;

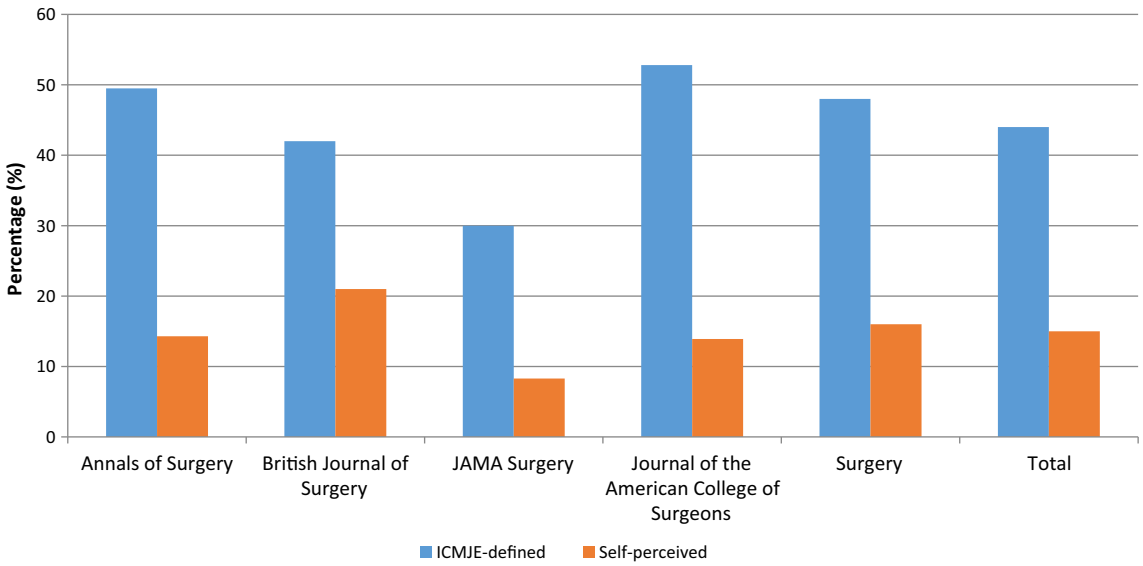

Fig. 3 Prevalence of honorary authorship according to ICMJE guidelines and self-perceived per journal

Table 3 Univariate analysis of continental differences

	Europe	North America	Asia	Total	*p* value
Aware of ICMJE guideline, *N* (%)	119 (86.2)	114 (92.7)	38 (86.4)	271 (88.9)	0.914
Aware of issue of honorary authorship, *N* (%)	78 (56.5)	98 (79.7)	26 (60.5)	202 (66.4)	0.197
Senior department member automatically included, *N* (%)	35 (25.4)	9 (7.3)	12 (27.3)	56 (18.4)	0.024
Suggested to add honorary author, *N* (%)	10 (7.2)	8 (6.5)	9 (20.5)	27 (8.9)	0.036
Only non-authorship tasks, *N* (%)	69 (50.0)	46 (37.4)	20 (45.5)	135 (44.3)	0.439
A co-author who is an honorary author according to ICMJE guidelines, *N* (%)	22 (15.9)	11 (8.9)	13 (29.5)	46 (15.1)	0.022

5.3%) felt that this was always justified, in contrast to 58 responders (58 out of 190; 30.5%) who thought this was never justified (Table 2).

Table 3 shows the awareness of the ICMJE guidelines and of the issue of HA, per continent of the responders. Respondents from Asia and Europe were more likely to add a senior member of the department, as compared to their colleagues from North America (25.4% and 27.3% vs. 7.3%, respectively, $p = 0.024$). Respondents from Asia were more likely to have an honorary author suggested to be added compared to European and North American research groups (20.5% vs. 7.2% and 6.5%, respectively, $p = 0.036$). According to ICMJE guidelines, HA occurs among 29.5% of the Asian respondents, compared to 15.9% of the European and 8.9% of the North American respondents ($p = 0.022$).

As shown in Table 4, no significant differences were found in occurrence of HA between the journals investigated.

Discussion

This unique study investigating the issue of HA according to ICMJE guidelines in 320 articles demonstrates that it is presumed to occur in more than 40% of articles published in five major surgical journals in 2016.

To our knowledge this is the first study which addresses this subject in the surgical literature.

However, a significantly lower percentage of the responders (15%) felt that any of their own co-authors listed did not make sufficient contributions to merit being included as co-author. This discordance suggests that even though more than 60% is aware of the general issue of honorary authorship and almost 90% of the responders stated that they are aware of the ICMJE guidelines, these guidelines are not always respected, understood or applied in a proper manner. Unfortunately, we were not able to distinguish whether they only knew about the existence of these guidelines or actually knew its contents. This difference in interpretation of the question was not verified by

Table 4 Univariate analysis of differences between journals

	AoS	BJS	JAMA	JACS	SU	Total	*p* value
Aware of ICMJE guideline, *N* (%)	93 (88.6)	70 (86.4)	56 (93.3)	32 (88.9)	21 (84.0)	272 (88.6)	0.998
Aware of issue of honorary authorship, *N* (%)	66 (62.9)	49 (60.5)	42 (71.2)	28 (77.8)	18 (72.0)	203 (66.3)	0.914
Senior department member automatically included, *N* (%)	22 (21.0)	13 (16.0)	10 (16.7)	6 (16.7)	5 (20.0)	56 (18.2)	0.964
Suggested to add honorary author, *N* (%)	11 (10.5)	6 (7.4)	5 (8.3)	3 (8.3)	2 (8.0)	27 (8.8)	0.973
Only non-authorship tasks, *N* (%)	52 (49.5)	34 (42.0)	18 (30.0)	19 (52.8)	12 (48.0)	135 (44.0)	0.546
A co-author who is an honorary author according to ICMJE guidelines, *N* (%)	15 (14.3)	17 (21.0)	5 (8.3)	5 (13.9)	4 (16.0)	46 (15.0)	0.506

a follow-up question which is a limitation of this study design and might be addressed in future work.

Moreover, it can be questioned if the responders always understand the contribution of senior author or professor to the work. A senior author may have introduced the idea for a new study and therefore can be the original motor for development of this study. This might not be well known by a junior author who sometimes serves as corresponding author. To overcome the false idea of HA, one could consider adding a new topic to the guidelines stating that the conception of new research is in fact a key aspect.

Geographically, honorary authorships were most prevalent on the Asian continent. This analysis, however, is limited by the low or absent respondents from Africa and South America. Previously, Eisenberg et al. quantified the effect of geographic factors on the prevalence of HA in journals published in the radiological field. Similarly, South America and Africa were under-represented in their study [5]. Furthermore, Eisenberg et al. observed that ICMJE-defined HA was higher among research groups from Asia and Europe than from North America. This observation was in accordance with our study. A possible explanation might be cultural differences and local policy.

In our study, we noted that the journal in which the article was published was not a determining factor in the prevalence of HA. This finding might be explained by the application of strict rules pertaining to HA, as stated in the authorship information section of all journals to which the publication must adhere to. Furthermore, before even accepting a publication, the journals in question refer to the ICMJE guidelines.

Our study is not the first to address HA in the medical sciences. Previous research showed that HA is also present in renowned journals pertaining to the fields of neurosurgery, radiology, dermatology, rehabilitation medicine and pharmaceutical journals [4–7]. The present results are similar to previous articles on HA on the medical literature in other specialties, which report an honorary authorship rate between 19 and 26% [4, 7, 9].

Elliott et al. recommend several measures to cope with structural and cultural factors that maintain HA [10]. Firstly, journals should require authors to state their contributions in the submitted paper. Secondly, funders could also ask for authorship policies on submitted research proposals. Furthermore, universities could also play a role by training research groups on the authorship policies. Also, research groups could also create local authorship policies on own initiative. Another measure could also be to establish an authorship committee which ensures application of authorship guidelines and which can be consulted during disagreements regarding authorship. Furthermore, activities that promote team building may also play a positive role in creating a culture in which disagreements and hierarchy can be discussed. Finally, principle investigators should make clear criteria for authorship as early as possible.

The current study is not without limitations. One unavoidable limitation of our study is the retrospective character of our survey, which might lead to recall bias. Another limitation might be non-response bias, a known element of research surveys, especially on a sensitive topic as HA [11]. This might suggest that our estimated prevalence of HA might even be an underestimation. However, our response rate of only 30.9% was comparable to previous studies on HA [4–6] and is considered a representative response rate pertaining to online surveys [12].

Conclusion

Honorary authorship is a well-known issue by researchers in the surgical literature despite awareness of the ICMJE guidelines. Our findings illustrate that HA is present in studies published recently in the scientific surgical field and that the problem is bigger than unawareness of authorship guidelines. The authors plead for a more transparent authorship system in which journal editors and senior department members take more responsibility into enforcement of the ICMJE guidelines.

Author's contribution JL, AV, YD and PG contributed to acquisition of data; JL, EL and PG analysed and interpreted the data; JL and PG drafted the article; JL designed the tables; AV and YD designed the figures; all authors critically revised the article; JL, EL and PG approved the final version on behalf of all authors.

Compliance with ethical standards

Conflict of interest The authors declare no conflict of interest.

References

1. Defining the Role of Authors and Contributors: International Committee of Medical Journal Editors; 2017. http://www.icmje.org/recommendations/browse/roles-and-responsibilities/defining-the-role-of-authors-and-contributors.html
2. The Ethics of Manuscript Authorship: Best Practices for Attribution: American Journal Experts. https://www.aje.com/en/arc/ethics-manuscript-authorship/
3. Strange K (2008) Authorship: Why not just toss a coin? Am J Physiol Cell Physiol 295(3):C567–C575
4. Gadjradj PS, Fezzazi RE, Meppelder CA, Rietdijk WJ, Matabadal NN, Verhemel A et al (2018) Letter: honorary authorship in neurosurgical literature: a cross-sectional analysis. Neurosurgery 82(1):E25–E28
5. Eisenberg RL, Ngo LH, Bankier AA (2014) Honorary authorship in radiologic research articles: Do geographic factors influence the frequency? Radiology 271(2):472–478
6. Kayapa B, Jhingoer S, Nijsten T, Gadjradj PS (2018) The prevalence of honorary authorship in the dermatological literature. Br J Dermatol 178(6):1464–1465
7. Flanagin A, Carey LA, Fontanarosa PB, Phillips SG, Pace BP, Lundberg GD et al (1998) Prevalence of articles with honorary authors and ghost authors in peer-reviewed medical journals. JAMA 280(3):222–224
8. Wislar JS, Flanagin A, Fontanarosa PB, Deangelis CD (2011) Honorary and ghost authorship in high impact biomedical journals: a cross sectional survey. BMJ 343:3
9. Shapiro DW, Wenger NS, Shapiro MF (1994) The contributions of authors to multiauthored biomedical research papers. JAMA 271(6):438–442
10. Elliott KC, Settles IH, Montgomery GM, Brassel ST, Cheruvelil KS, Soranno PA (2017) Honorary authorship practices in environmental science teams: structural and cultural factors and solutions. Acc Res 24(2):80–98
11. Johnson TP, Wislar JS (2012) Response rates and nonresponse errors in surveys. JAMA 307(17):1805–1806
12. Nulty DD (2008) The adequacy of response rates to online and paper surveys: What can be done? Assess Eval High Educ 33(3):4